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The Journal

of the Michigan State Medical Society

Volume 54 | April, 1955 | Number 4

CANCER

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THE JOURNAL
of the Michigan State Medical Society

VOLUME 54 APRIL, 1955 NUMBER 4

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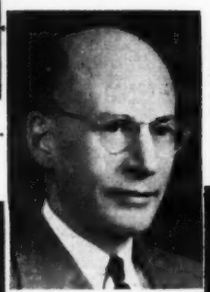

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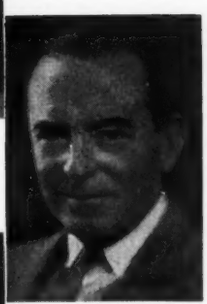

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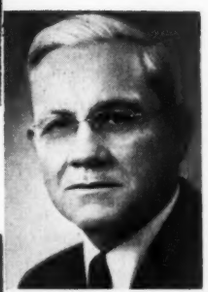

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of the Michigan State Medical Society

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1955 Action Program Gets Sendoff

H. G. BENJAMIN, M.D.

A host of problems and opportunities facing the county medical society and its individual members were discussed thoroughly at the annual MSMS County Secretaries-public Relations Conference at the Sheraton-Cadillac Hotel, Detroit, on Sunday, January 30. More than 150 persons with a direct interest in the future of the medical profession participated.

Howard G. Benjamin, M.D., of Grand Rapids, Secretary of the Kent County Medical Society, was elected Chairman of the county secretaries conference and will head up the event in 1956.

So successful were the dramatic skits—presented with a light touch—in provoking discussion when introduced at the 1954 conference, a similar technique was used this year with added improvements. These additions were under the direction of Dr. Don Phillips, President of Hillsdale College and originator of the "Phillips 66" discussion technique, who performed outstanding services as moderator in the first afternoon session.

A group of M.D.'s once again had the opportunity to display their histrionic talents in the five skits which laid the discussion groundwork for practical problems faced by county medical societies. Topics for the skits were:

1. County Medical Society Programs
2. Advantages and Availability of MSMS Health and Accident Insurance Program
3. Patient Relations by the Office Secretary
4. Blue Cross Utilization
5. MSMS Periodic Health Appraisal Plan

An unusual Public Relations Program was presented during the morning, beginning with a legislative forum at 10:00 a.m. moderated by Jackson E. Livesay, M.D., of Flint, Speaker of the MSMS House of Delegates. Frank E. Wilson, M.D., Director of the AMA Washington office, discussed pending national legislation. State legislation was covered by L. A. Drolett, M.D., Lansing, Chairman of the MSMS Legislative Committee, and Representative Harry J. Phillips, Port Huron, 1954 Majority Floor Leader, Michigan House of Representatives.

The report of a survey of Public Relations activities within county medical societies completed the morning program. E. H. Fenton, M.D., Detroit, President of the Wayne County Medical Society, discussed PR activity in large societies; N. W. Scholle, M.D., Muskegon Heights, Past President of the Muskegon County Medical Society, the medium-sized county medical societies and B. L. Masters, M.D., Fremont, Chairman, MSMS Rural Medical Service Committee, small county medical societies.

The program closed with a spirited panel discussion on non-service-connected disabilities for veterans, moderated by Ralph A. Johnson, M.D., Detroit, MSMS Delegate to the AMA. G. W. Slagle, M.D., of Battle Creek, Alternate Delegate, and J. Joseph Herbert, LL.B., of Manistique, MSMS Legal Counsel, served on the panel.

Genesee, Wayne, Saginaw, and Kent, in that order, were the counties with the largest number of representatives registered.

Those present included:

County Secretaries.—J. E. Mahan, M.D., Allegan (Allegan); Harold Kessler, M.D., Alpena (Alpena-Alcona-Presque Isle); L. Fernald Foster, M.D., Bay City (Bay-Arenac-Iosco); E. M. Chandler, M.D., Battle Creek (Calhoun); T. B. Mackie, M.D., Sault Ste. Marie (Chippewa-Mackinac); J. B. Rowe, M.D., Flint (Genesee); C. L. Hoogerland, M.D., Alma (Gratiot-Isabella-Clare); W. O. Michel, M.D., Hillsdale (Hillsdale); C. F. Wible, M.D., Sebewaing (Huron); R. H. Trimby, M.D., Lansing (Ingham); H. W. Porter, M.D., Jackson (Jackson); E. O. Pearson, M.D., Kalamazoo (Kalamazoo); H. G. Benjamin, M.D., Grand Rapids (Kent); J. R. Doty, M.D., Lapeer (Lapeer); R. M. Duffy, M.D., Pinckney (Livingston); Alec Whitley, M.D., St. Clair Shores (Macomb); L. G. Glickman, M.D., Menominee (Menominee); J. P. Klein, M.D., Fremont (Newaygo); E. F. Crippen, M.D., Mancelona (Northern Michigan); G. N. Petroff, M.D., Pontiac (Oakland); R. V. Bucklin, M.D., Saginaw (Saginaw); C. D. Selby, M.D., Port Huron (St. Clair); E. W. Blanchard, M.D., Deckerville (Sanilac); E. S. Austin, M.D., Owosso (Shiawassee); D. K. Morgan, M.D., South Haven (Van Buren); B. C. Payne, M.D., Ann Arbor (Washtenaw); M. L. Lichter, M.D., Detroit (Wayne).

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(Continued on Page 400)

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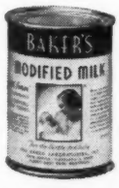

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Methods employed to relieve the pain in cancer should be pursued with the aggressiveness attendant upon curative therapy. An air of optimism and confidence on the part of the physician can do much, because "a healthy mental attitude raises the threshold of pain."

* * *

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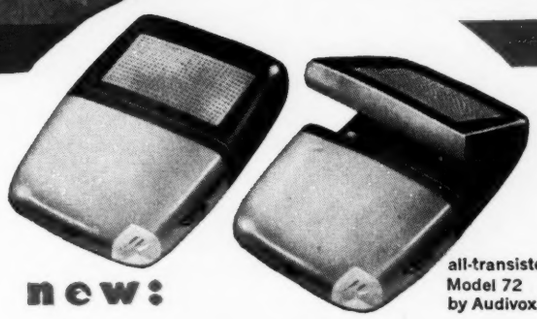

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Cancer Comment

CANCER STUDIES

Statistics and tabulating machines, as well as test tubes and x-ray therapy, may prove effective weapons against cancer.

In their Ninth Clinical Report on Cancer published in the *University of Michigan Medical Bulletin,* Drs. Howard B. Latourette, Isadore Lampe, and Fred Jenner Hodges wrote, "The gradual accumulation of information about the variety of neoplasms that make up the complex field of 'cancer' is important in trying to anticipate their growth characteristics, pattern of spread, and their natural course."

The University of Michigan Cancer File covers the period between February 27, 1936, through December 31, 1950.

It represents the clinical experiences which University of Michigan doctors have had with patients suffering from malignant neoplasms. Exactly 21,523 patients with 21,875 neoplasms have been recorded on individual IBM cards. These cards represent the University of Michigan Cancer File.

The report is unique because it contains an unusually high proportion of the less common forms of neoplastic disease. For example, 231 different kinds of cancer have been observed, treated, and tabulated at University Hospital.

The report also reveals that:

1. The most commonly observed forms of cancer involve the female genital system, cancer of the large intestine, and lymphoblastoma (cancer of the blood) in that order;
2. The least commonly observed involves the upper respiratory tract;
3. Of the patients at the closing date of the current report 76.9 per cent had not been treated prior to admission to University Hospital.

Detailed analysis of the Ninth Report reveals that early treatment as well as the type of cancer treated influence recovery and survival. Patients who showed the highest survival rates (70 to as much as 100 per cent of them) averaged 38.7 years of age when first examined and treated.

Better than 30 per cent of patients with cancer of the rectum and colon, previously considered to be one of the most difficult kinds of cancer to manage, can expect to survive a minimum of five years after treatment.

The highest survival rate, as far as type of cancer is concerned, was found among patients who had neoplasms either of the male genital system, of the breast, of the skin, or of the salivary glands and neck. As many as 50 to 58 per cent of these survived a minimum of five years after treatment.

Patients with cancer of the abdomen, stomach region, of the blood, the urinary system, or of the upper and lower respiratory tracts appeared to have the lowest survival rate. In this group and with one of the lowest survival rates is the so-called "metastatic neoplasm." Over the past 15 years many patients successfully treated for a neoplasm often died of other causes. The report emphasized that the survival rates in all categories of cancer were "necessarily only rough approximations," because of the mixture of previously treated and untreated patients.

Dr. Hodges, who is chairman of the Medical School's Department of Radiology, called the University of Michigan Cancer File a "hope chest" of valuable and detailed information for students and researchers in the field of cancer. Each case, each kind, each course of treatment and its results is carefully tabulated on a coded IBM card.

The writers of the current report expect to publish a separate analysis, in the near future, of their experiences with lung cancer. Widespread public interest in the smoking problem convinced the University of Michigan investigators to delete lung cancer statistics from the current report for later, more detailed publication.

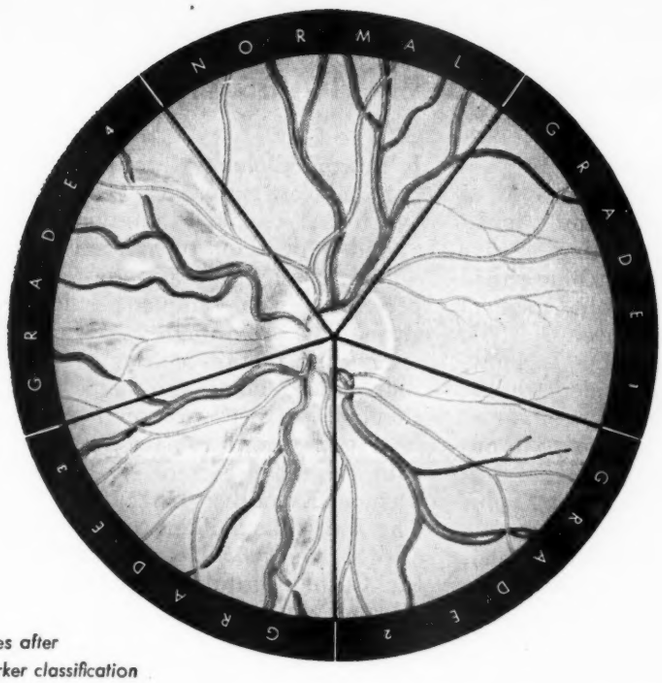
Inadequately treated cancer is a fatal disease.

* * *

Any decision that a given cancer case is incurable while still operable should be made only after long and serious thought.

* * *

Osteogenic sarcoma and Ewing's tumor are distinct pathological entities but clinical differentiation between them is not always possible.



Eye ground changes after Keith-Wagener-Barker classification

In hypertension, effective reduction of blood pressure is assured in 90% of appropriate cases when dosage is fitted to the requirements of the individual patient. Response is reliable, uniform, prolonged. By-effects are minimal. Convenient t.i.d. oral tablet medication.

There is usually regression in retinal vascular changes, resorption of exudates, subsidence of papilledema, and improvement in vision.

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Supplied in scored tablets of 20, 40, and 100 mg., bottles of 100. Also available: Injection, 10 mg. per cc., vials of 10 cc.

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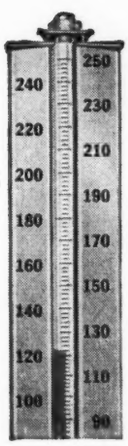

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John Castellucci Moves Up

John W. Castellucci was appointed Executive Director of the Blue Shield Commission—national co-ordinating agency of the seventy-seven Blue Shield voluntary, non-profit, medical care plans on March 1, 1955, as announced by Dr. L. Howard Schriver, President of the Blue Shield Commission.

John, well known to thousands of Michigan M.D.'s has served as assistant director of Michigan Medical Service (the Michigan Blue Shield Plan) since 1943. He was active both in organizing Plans throughout the United States and in establishing programs to assure the efficient operations of Blue Shield Plans.

In 1945, Mr. Castellucci helped establish and organized the Veterans' Home-Town Care Plan. The program permits wounded veterans a free choice of doctors when receiving medical care. John worked closely with the Veterans Administration in Washington, D. C., to establish the plan which has enabled thousands of veterans to be attended by their own family doctors.

John Castellucci also has guided Blue Shield personnel in a unique physician relations program. The program gives doctors of medicine necessary information concerning activities of their Blue Shield Plans and helps doctors work more closely with their sponsored prepayment program.

"We are proud to have a man so competent and with so many years of experience in Blue Shield become Executive Director of the Commission. The Blue Shield Plans and the Blue Shield Commission pledge full co-operation toward helping Mr. Castellucci find his new position both successful and gratifying," said Dr. Schriver in the announcement.

Blue Shield nationally now protects more than 32 million Americans against surgical and medical expense through prepayment.

Camping for Epileptic Children

For the past several years, epileptic children in and around Detroit have been attending Camp Crile each summer. However, since this camping service is available to epileptic children from all over Michigan, we want all doctors to be aware of it.

In 1938, the Michigan Society for Epileptic Children was organized by a group of public-spirited women in Detroit. This society incorporated under the laws of Michigan and established Camp Crile, for epileptic children only, on a 28½ acre farm on Joslyn Lake Road near Chelsea, Michigan. The society is guided by an executive committee consisting of twelve elected members and an advisory board of outstanding professional and businessmen.

There is no lake or stream at Camp Crile, since swimming and boating are hazardous for the child with seizures. Camping activities consists of ball games, hikes, picnics, cookouts, nature study and handicraft such as leather work, weaving, and finger painting. The program is varied to fit both boys and girls from 8 through fourteen years of age. Slow learning children in this age group are also accepted if they are able to feed and dress themselves and enter into organized activities.

Camp Crile is staffed by a qualified director, three counselors, a cook and cook's helper, and two doctors from Chelsea, Michigan, are on call at all times.

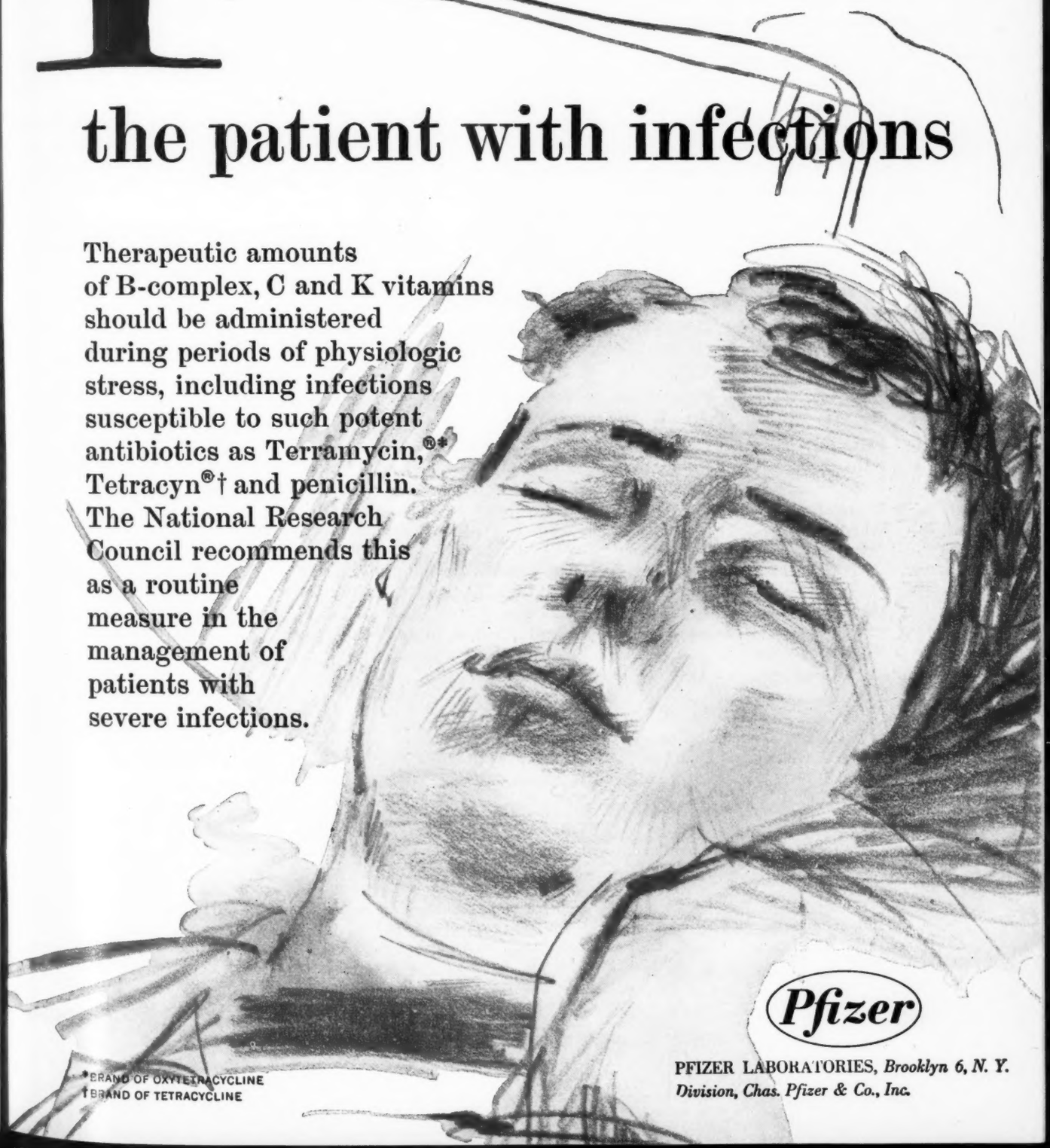
Camp is operated each summer for eight weeks. The first four weeks, June 28 to July 26, is for boys, and July 26 to August 23 is for girls.

Because Camp Crile is supported by contributions from private individuals and organizations who recognize the needs of this handicapped group, we are able to keep our fees low, so as not to exclude anyone. Camp fees are $15.00 a week or $60.00 for four weeks. From our past experience, we have learned that four weeks is the minimum time a child should spend at camp to reap the maximum benefit.

Children are accepted on the recommendation of their doctor and school. Applications or more information may be obtained by writing the registration chairman for Camp Crile, Mrs. Christine DeWeerd, 10034 Lincoln Drive, Huntington Woods, Michigan.

Stress Fortify

the patient with infections



Therapeutic amounts of B-complex, C and K vitamins should be administered during periods of physiologic stress, including infections susceptible to such potent antibiotics as Terramycin,®* Tetracyn®† and penicillin. The National Research Council recommends this as a routine measure in the management of patients with severe infections.

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You and Your Business

AMA APPROVES SIMPLIFIED INSURANCE CLAIM FORM

Approval has been granted by AMA's Council on Medical Service to a simplified insurance claim form drafted by a special committee of the Health Insurance Council. AMA's Committee on Prepayment Medical and Hospital Service collaborated with the HIC committee. The form is designed for use in administering surgical expense benefits under group insurance. Physicians who practice in areas where this type of insurance coverage is prevalent should be particularly interested in this development.

Eventually the Health Insurance Council hopes to have about six insurance blanks available to accommodate the various types of benefits. Only this form (GS-1) has been approved by AMA to date although the Council on Medical Services has suggested certain modifications in a second which has been approved "in principle."

The form, approved by companies writing approximately 85 per cent of the group accident and health premium volume in the United States, is as follows:

APPROVED FORM

(COMPANY NAME)
SURGEON'S STATEMENT
(GROUP INSURANCE)

**(This form should be completed immediately and returned to the patient or, employer, or company, as appropriate)*

(1) Patient's Name ..... Age .....
(2) Nature of surgical or obstetrical procedure (Describe fully) .....
.....
Charge for this procedure $..... Date performed ..... 19.....
Where performed .....If in hospital, in-patient ☐ out-patient ☐
(3) *Was procedure due to pregnancy? Yes ☐ No ☐
If "Yes," what was approximate date of commencement of pregnancy? ..... 19.....
(4) *Is further operative procedure anticipated? Yes ☐ No ☐
If "Yes," explain .....
(5) *Was surgery due to injury or sickness arising out of patient's employment? Yes ☐ No ☐
If "Yes," explain .....
Remarks: .....
.....
.....
.....

Signed .....*M.D.
Address .....
Date.....19..... *Phone .....

AUTHORIZATION TO PAY SURGEON

(To be completed by the insured employe if payment is to be made directly to the surgeon)

I hereby authorize payment directly to.....
(PRINT—Name of Surgeon)
of the Group Surgical benefits otherwise payable to me but not to exceed the charge stated above. I understand I am financially responsible to the surgeon for charges not covered by this authorization.

Date.....19..... Signed .....
(Insured Employe)

*To be included at company's option
(GS-1)

HIGHLIGHTS OF EXECUTIVE COMMITTEE OF THE COUNCIL

Meeting of February 23, 1955

Seventy-one items were presented to the Executive Committee of The Council at its February 23 meeting in Lansing. Items of chief importance were:

- **Annual report of Michigan Hospital Service** (Blue Cross) as developed by President John W. Paynter of Detroit, was presented and received with thanks.
- **Legal case of Kopprasch vs. MSMS et al:** Progress report was presented by Legal Counsel J. Joseph Herbert.
- **Proposed amendments to Act 350** of the Public Acts of 1913 (County Hospital Act) were presented by Mr. Herbert. These amendments will be presented to the 1955 Legislature by the Michigan Hospital Association.
- **Committee reports.**—The following committee reports were presented: (a) Public Relations

(Continued on Page 408)

The hypoproteinemic of any age

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an intact-protein,
carbohydrate concentrate

they benefit from

Protinal*

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Micropulverized casein powder (61.25%), Carbohydrate (30%)
to maintain protein/carbohydrate equilibrium essential for tissue regeneration.

COMPLETE PROTEIN

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VIRTUALLY FAT AND SODIUM FREE (Less than 0.03% Na, Less than 1.0% Fat)

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*VI-PROTINAL—Palatable whole protein-carbohydrate-vitamin-mineral mixture of high biological value

HIGHLIGHTS OF THE COUNCIL

(Continued from Page 406)

Committee, meeting of January 29; (b) Rheumatic Fever Control Committee, February 2; (c) Study on Prevention of Highway Accidents, February 17; (d) Venereal Disease Control Committee, February 20.

- **Report on Successful Executive Secretaries Conference,** held February 15 at MSMS headquarters in Lansing, was reported by Secretary L. Fernald Foster, M.D., Bay City. Seven Michigan county medical societies sent their representatives to this Conference. Special honor was accorded Else Kolhede, Wayne County Medical Society's Executive Secretary, commemorating her tenth anniversary with WCMS.
- **Beaumont Memorial.** Gift of the St. Louis Medical Society of Dr. Beaumont's bed, for housing in the Beaumont Memorial on Mackinac Island, was accepted with sincere thanks.
- **A plaque,** to be processed by Michigan Medical Service (Blue Shield) for distribution to all MSMS members, was approved—with thanks to Blue Shield for this professional relations project; also a folder entitled "To All My Patients" was approved as a leaflet to be supplied MSMS members by Michigan Medical Service.
- **Committee Appointments:** Charles Howard Ross, M.D., Ann Arbor, was appointed Chairman of MSMS Committee for American Medical Education Foundation; E. F. Sladek, M.D., Traverse City, was appointed a member of the Special Committee on Mediation, Ethics and Grievance.

  V. G. Chabut, M.D., Northville, was made Chairman of Subcommittee on School Health Problems (of Child Welfare Committee), with E. H. Watson, M.D., Ann Arbor, as a member thereof; Albin Swengle, M.D., Ann Arbor, as a member of the Industrial Health Committee.

  H. W. Longyear, M.D., Detroit, and J. E. Weber, M.D., Grand Rapids, were appointed MSMS representatives to the American Academy of Pediatrics' Committee on Welfare of the Fetus and Newborn.
- **Karl A. Menninger, M.D.,** Topeka, Kansas, was approved as the 1955 Biddle Lecture, upon nomination of President Baker.
- **MSMS Representtives:** Frank Van Schoick, M.D., Jackson, was appointed as official MSMS representative to attend the Third Children's Service Forum, East Lansing, March 9; Otto O. Beck, M.D., Birmingham, R. L. Novy, M.D., Detroit, and John M. Wellman, M.D., Lansing, were nominated as MSMS representatives to the Board of Michigan Medical Service; W. A. Stryker, M.D., Chairman, MSMS Committee on Blood Banks, was appointed as MSMS Representative to the Board of Directors of the Northern Illinois Blood Bank, Inc.; F. C. Swartz, M.D., Lansing, Otto Van der Velde, M.D., Holland, and H. W. Woughter, M.D., Flint, were appointed as official MSMS representatives to the Conference on Aging, Ann Arbor, June, 1955; John R. Rodger, M.D., Bellaire, and R. W. Teed, M.D., Ann Arbor, were appointed as Delegate and Alternate Delegate, respectively, of MSMS to the Michigan Health Council.
- **Report on Congress** on Industrial Health, meeting in Detroit, as presented by MSMS representative, Max R. Burnell, M.D., Detroit, was accepted with sincere thanks.
- **Annual Session dates** for 1957 (September 25-26-27) were approved.
- **J. E. Livesay, M.D.,** Flint, Speaker of the MSMS Honse of Delegates, was appointed as Moderator of Panel on Undergraduate Medical Education, scheduled for Monday, September 26, Grand Rapids (luncheon), with the Deans of the two medical schools in Michigan, as participants.
- **C. A. Payne, M.D.,** Grand Rapids, and H. M. Nelson, M.D., Detroit, were appointed as Chairman and Vice Chairman, respectively, of "Cancer Control Day" during Michigan Clinical Institute (March 9, 1955).
- **Further publicity** in JMSMS and in the Secretary's Letter for the Michigan Foundation for Medical and Health Education and its Student Loan Revolving Fund was authorized.
- **Felicitations** to Dean A. C. Furstenberg, M.D., on receipt of the Bene Merente Medal from Pope Pius XII were spread upon the minutes, with the Secretary instructed to so notify Dr. Furstenberg.
- **Report on recent meeting** of American Medical Education Foundation Board, held in Chicago, as presented by MSMS representative Gilbert B. Saltonstall, M.D., of Charlevoix, was approved with sincere thanks to Dr. Saltonstall.
- **Matters of mutual health interest** were discussed with A. E. Heustis, M.D., Michigan Health Commissioner.
- **The County Secretaries-Public Relations Seminar** (three days) was scheduled to be held at the Sheraton-Cadillac Hotel, Detroit, Friday, Saturday, Sunday, January 27-29, 1956. The Annual Meeting of The Council will precede this Seminar.
- **Report of H. B. Fenech, M.D.,** Detroit, on Rome meeting of World Medical Association, at which Dr. Fenech served as official MSMS representative, was presented and approved with sincere thanks to Dr. Fenech.
- **William Bromme, M.D.,** Detroit, reported on Chicago meeting at American Medical Association headquarters on its Committee on Federal Medical Services, February 19.

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AMA Washington Letter

THE MONTH IN WASHINGTON

Before Congress, and getting some attention but almost no action, is the Hoover Commission's report on federal medical services. Most controversial question is how much medical care the Federal Government should give to veterans whose disabilities are not a result of their military service. This is ground that has been well plowed before, by the first Hoover Commission, by various studies and reports and most recently by the AMA's campaign to educate the profession on the non-service-connection situation.

Apathy of Congress may be explained in part by decision of the White House, the week after release of the Commission report, to appoint a commission to inquire into the whole field of veterans' benefits. The group, headed by Gen. Omar Bradley, former VA administrator, is not expected to complete its study until next fall.

A Medical Task Force (fourteen physicians and one dentist) did most of the spadework for the Hoover Commission. Publication of its report showed that not all the recommendations of the Task Force were accepted by the full Commission. The most notable differences came in veterans' medical care. The Task Force concluded that what is most urgently needed is a firm legal basis for determination of eligibility for medical care. Its solution would be to end eligibility for non-service-connected care three years after separation from service. The Task Force declared that "the very normal incident of fulfilling the duties required of every citizen" should not entitle part of the population to lifelong medical care. The three-year limit, according to the Task Force, would reduce the potential VA patients from 17.5 million to 3 million, at an annual saving of $150 million. The Commission would not go along with this on the theory that "the sentiment of the American people is that a sick and really indigent veteran should be provided care in VA hospitals." Instead it recommended that:

(1) the inability-to-pay statement for non-service care be "subject to verification," (2) a veteran assume an interest-free liability to pay for such care at some future date "if he can do so," (3) the VA close down 20 hospitals, mostly general medical and surgical, (4) outpatient care be furnished indigent veterans with non-service disabilities, and (5) all veterans laws be brought together into a single code.

The American Legion labeled the Hoover Commission recommendations as "heartless," and "unworthy of serious consideration by informed people." Through Secretary and General Manager George F. Lull, the American Medical Association made these points: (1) closer screening of financial statements already has proved to be ineffective, (2) rejecting the Task Force plan for a three-year cutoff while offering outpatient care would skyrocket costs and defeat the commission's goal of eliminating wasteful spending and unnecessary intrusion by the government in private affairs.

The Commission has other equally important, if not as controversial, proposals. Among them are:

Closing down of general medical hospitals of the Public Health Service, elimination of free medical care for merchant seamen, extension of contributory health insurance to military dependents and other U. S. beneficiaries along lines of the proposed program for federal civilian employes, regionalization of military hospitals with one department in command of all hospitals in each area, creation of a Federal Advisory Council of Health and physician and lay members who would advise the President on both governmental and national health problems, and creation of a National Medical Library out of the present Armed Forces Medical Library. Copies of both Commission and Task Force reports are available at the Government Printing Office, Washington 25, D. C.

Secretary Hobby of the Department of HEW, testifying on all the administration's proposals, opened a series of health hearings before the House Interstate and Foreign Commerce Committee. Pressed to make a choice, she indicated that the two most important parts of the six-part omnibus health bill were reinsurance of health plans and federal guarantee of mortgages for health facilities.

But the committee decided that first priority should go to mental health proposals. Accordingly the following week it started hearings on that part of the omnibus bill calling for a five-year program of grants to states for mental health projects. Also before the committee was the chairman's bill for a national study of mental illness problems, to be financed by the U. S. but conducted by private groups.

Holding priority on the Senate side was legislation for a five-year, $250 million program for aid to medical schools, sponsored by Chairman Hill of the Labor and Public Welfare Committee.

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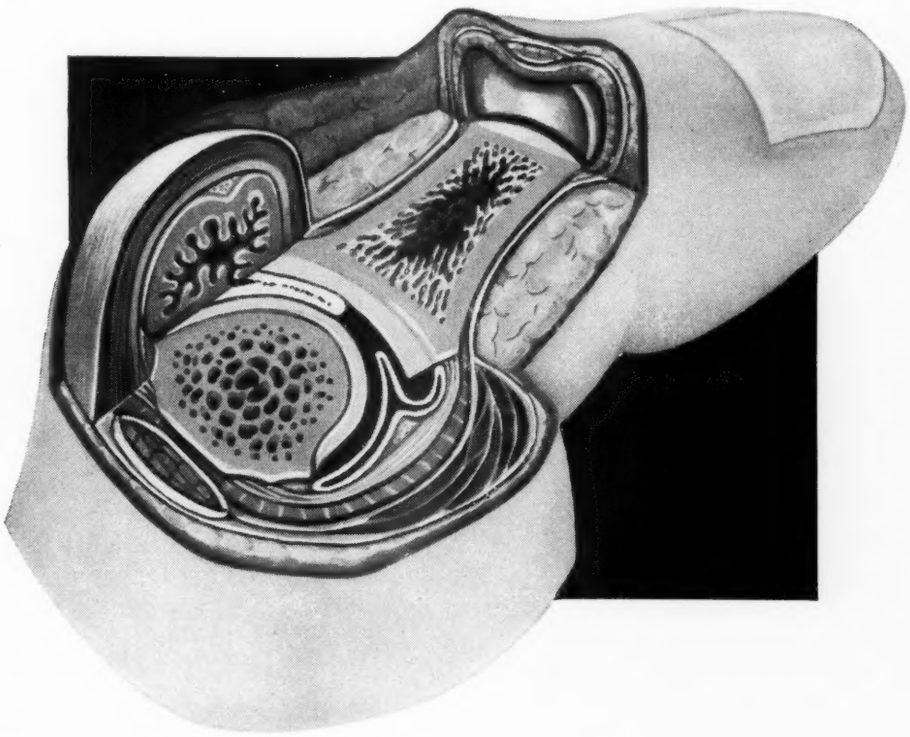
*Bunim, J. J.: Research Activities in Rheumatic Diseases, Pub. Health Rep. *69*:437, 1954.



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PR REPORT

THIS SNAPSHOT, taken after presentation ceremonies at the Michigan Clinical Institute, symbolizes the spirit of public service and community co-operation which is the keystone to good public relations, particularly for the medical profession. Pictured are representatives of six Michigan daily newspapers that conscientiously have promoted within their own areas better understanding of medical progress and the private practice of medicine. The seventh man, of course, is Duncan J. McColl, M.D., of Port Huron, currently "Michigan's Foremost Family Physician," whose selection for that honor in itself indicates a devotion to the ideals which earned friends for Medicine for many generations before the phrase "public relations" was coined.

In the photograph (left to right) are:

Carl M. Saunders, Editor, *Jackson Citizen-Patriot;* Lee M. Woodruff, Editor, *Grand Rapids Press;* Dr. McColl; Arthur Gallagher, Editor, *Ann Arbor News;* Frank Angelo, Managing Editor, *Detroit Free Press;* Jack Bell, Editorial Writer, *Kalamazoo Gazette,* and Merle Oliver, Science Writer, *The Detroit News.*

MERLE OLIVER shared in the MSMS Award for Excellence in Medical Reporting, which was presented to *The Detroit News* primarily on the basis of his work in "reporting problems and progress of Medicine and Health in Michigan" and that of his colleague Allen Shoenfield, of Ann Arbor, who covers scientific activities on a national level for *The News.* The general award, second to be presented since the honor was inaugurated in 1953, was presented to Warren S. Booth, publisher of *The News,* at an informal dinner preceding the opening of the Michigan Clinical Institute.

EACH OF THE FIVE other dailies represented was presented with an MSMS special award for distinguished service to health in Michigan for co-sponsoring a local medical forum in co-operation with the county medical society in its community during 1953 and/or 1954. These forums, which originated in Michigan through a joint effort of Wayne County Medical Society and the *Detroit Free Press,* have proven to be among the most valuable educational activities undertaken by county societies. Several forum series have already been staged this year, with others planned for the fall.

Beyond the obvious benefits of giving up-to-date medical information to members of the community, the forums have been helpful in emphasizing the rapid progress of medical science and in demonstrating the excellent quality of medical care available throughout Michigan.

TWO SPECIAL EVENTS of interest and possible PR value to Medicine will be observed in Michigan in May. Number one, National Hospital Week, is sponsored in our state by the Michigan Hospital Association and is scheduled for May 8 to 14. The 1955 theme: "Your Hospital . . . A Tradition of Service." In Michigan, the 15,000 members of hospital auxiliaries (a great percentage of whom are physicians' wives) have taken the initiative to make the project a success, but the observance offers a fine opportunity to county medical societies and their individual members for PR cooperation.

The second—and "bigger"—event is Michigan Week, May 15 to 21. The theme: "I'm Glad I Live in Michigan." This special week is a period set aside for all people of Michigan to become better acquainted with their state, its resources, heritage, and opportunities. Michigan's health facilities and high standards of medical care and service are among the state's great assets. It is fitting that the medical profession take cognizance and participate in Michigan Week.

Against common intestinal flora

This sensitivity test shows ERYTHROCIN and the same antibiotics against a typical intestinal strain of *E. coli*. Note that ERYTHROCIN and penicillin do not affect growth of this organism—while the other antibiotics show marked inhibitory action. Since ERYTHROCIN is inactive against gram-negative organisms, *it is less likely to cause alteration in common intestinal flora—with an accompanying low incidence of side effects.*

...with little risk of serious side effects

The main reason is because ERYTHROCIN acts specifically. It destroys only harmful coccic invaders—yet doesn't materially change normal intestinal flora. *Thus, your patients rarely get side effects from* ERYTHROCIN. Nor do they get the allergic reactions sometimes seen with penicillin therapy. *Filmtab* ERYTHROCIN (100 and 200 mg.) comes in bottles of 25 and 100. Won't you prescribe *Filmtab* ERYTHROCIN—soon? Abbott

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County Executive Secretaries' Conference

Executive Secretaries of county medical societies spent a full day February 15 at MSMS headquarters in Lansing discussing common problems, with an eye to improving services offered by county societies. At present the number of county societies with a headquarters executive office staffed by non-M.D.'s has risen to seven.

Co-operation with ancillary groups was stressed, and staff representatives of five organizations with which MSMS works closely, were present for the afternoon discussion session.

Topics on the morning program, which was moderated by L. Fernald Foster, M.D., MSMS Secretary, were:

Membership Matters

Blue Cross-Blue Shield—Up to Date

Good Mediation Through an Active Committee

Value of Twenty-four Hour Telephone Coverage Service

County Society Employment Service to Help M.D. Offices

County Medical Bulletins, Exchanges, Et Cetera

The afternoon session was built upon the MSMS public relations handbook "Winning Friends for Medicine," which contains the basic 26 point PR program for county societies. Hugh W. Brenneman, MSMS Public Relations Counsel, served as moderator, with other staff members and L. H. Freye, representing Blue Cross, as panel members.

The luncheon period was devoted to a "surprise party" honoring Else Kolhede of Detroit, on her 10th anniversary as Executive Secretary of the Wayne County Medical Society.

County medical societies represented at the conference were: Wayne, Miss Kolhede; Genesee, Mrs. Sara Warren; Muskegon, Mrs. Lucy W. Bartlett; Washtenaw, Mrs. Flora Mayer; Saginaw, Carl G. King; Oakland, James Devereaux; Kent, R. L. Warnshuis, and Robert O. Kinsman.

Ancillary groups and their representatives present were: Michigan Epilepsy Center, W. F. Grimshaw; Michigan Heart Association, Ernest T. Guy; Michigan Health Council, Eugene H. Wiard; Michigan Medical Service, Louis H. Freye; Michigan State Dental Society, H. Leon Snow.

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Say you saw it in the Journal of the Michigan State Medical Society

The JOURNAL
of the Michigan State Medical Society
ISSUED MONTHLY UNDER THE DIRECTION OF THE COUNCIL
VOLUME 54 APRIL, 1955 NUMBER 4

Scrutiny of Progress Against Cancer

By Frederick A. Coller, M.D.,
and A. Burgess Vial, M.D.
Ann Arbor, Michigan

MANY DISEASES have been abolished by methods developed by science but cancer remains a major menace against the health of our people. As a relic of the past there still lingers in the minds of some physicians and of many people the thought that cancer is always hopeless and that treatment is always futile. This is a defeatist attitude that is far from the truth. The development of our knowledge of this disease and of methods for its treatment has in recent years been phenomenal and allows one to become an optimist in looking toward the future. A brief review of our present knowledge of the problem may well aid our progress in time to come. The education of the public in the character and behavior of cancer and especially in its early manifestations has been highly important. The recognition of precancerous lesions and the early diagnosis of cancer is of the utmost importance since prevention is easy and treatment of localized lesions is highly satisfactory. Let us review our efforts to effect early diagnosis.

Early Detection

Lay Education.—Certain principles of the education of lay people for the detection of cancer or for the warning symptoms of cancer have long been picturesquely applied by the American Cancer Society, the Michigan State Medical Society and others. It is heartening to have a patient report to one's office having just found a lump in a breast, or a mole only now detected as enlarging, or some rectal bleeding noted but yesterday. These are frequently the outcome of educational efforts on the part of these societies.

It is occasionally found that a patient suffers from cancerophobia, to which our educational and detection efforts may have contributed. One factor which may help in putting cancer in its more proper perspective for patients is the inclusion of cancer information in high school education, as urged by J. R. Hubbell and E. Margaret Siebert in our JOURNAL OF THE MICHIGAN STATE MEDICAL SOCIETY. At adolescence, before the so-called "cancer years," the symptoms suggesting that a patient should report for examination can be taught with less fear and more philosophy.

Physical Examination and Care.—The responsibility for early detection of cancer is falling more heavily on physicians because patients are reporting earlier. A disservice has been done to a patient who comes to his physician because of diarrhea and leaves the office with prescriptions for sulfaguanidine and paregoric without a searching hand laid on the abdomen and an educated finger placed through the anal canal. It will be remembered that nearly 50 per cent of neoplasms of the large bowel are palpable by rectal examination, and another 20 per cent of them are seen by sigmoidoscope. Barium enema would picture the rest of the large bowel for us. And how much more worthwhile to detect the cancer today than to find it three months hence, and rely on a more radical surgical procedure to try to make up for the delay.

Cancer Detection Centers.—Cancer detection centers exist in large numbers, all of them in the stage of evaluation. Their aims are clinical help

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for patients, attempting to detect cancers in early, usually asymptomatic stages, education of the public and physicians, and research. There were 265 such cancer detection centers in the United States in 1952, 129 of these clinics approved by the American Cancer Society.

Most of these clinics are supported by public or charitable funds, are open to anyone who applies for examination, and they do not provide treatment. Essentially all provide a thorough physical examination, including pelvic examination, hemoglobin and white count determinations, urinalysis, and chest x-ray; many examine feces for occult blood, do sigmoidoscopic examination, vaginal smears by Papanicolaou technique, and biopsies as indicated; a few do other special examinations. The Strang Center in New York studies the stomach by photofluorograph in all patients over forty-five. Gastric analysis is offered all patients at the Cancer Detection Center of the University of Minnesota with barium studies of stomach for all with hypochlorhydria (under 30 degrees), anemia, family history of gastric cancer, or epigastric symptoms. Barium enema was employed if there was occult blood or proctoscopic abnormality found.

The average cancer detection rate at all centers is eight cancers per 1,000 examinations, according to a study by the American Cancer Society. The rates of detection of tumors vary primarily if the clinics accept and statistically include symptomatic patients, or if the clinic is located in an area where the population has relatively little medical care as the Hot Springs National Park Center in Arkansas where twenty-one cancers per 1,000 examinees were found. In the latter center there were many who had sought no medical care previously for advanced symptoms.

The cost per case of cancer found has been variously estimated, from $914 in Hot Springs to several thousand dollars. The University of Minnesota group estimated the cost for each cancer detected was $3,400.

A significant contribution was pointed out by Hubbard and State: of the carcinomas detected 77 per cent were early, with no lymphatic metastases: 50 per cent of stomach cancers, 83 per cent of rectum and colon cancers, 50 per cent of breast cancers, 100 per cent of ovarian and cervical cancers.

So-called pre-cancerous lesions were detected in roughly 20 to 25 per cent of examinees. These lesions included nodular thyroids, cystic lesions of the breast, leukoplakia, polyps of the colon and rectum, various lesions of the cervix.

Hillsdale Plan.—The Hillsdale Plan for Cancer Detection was started in 1947-1948 with the aim of making each physician's office a cancer detection center. Publicity directed first at women over forty resulted in over 15 per cent of these women within the county reporting for examination in the first year. Advantages of this plan included the utilization of physicians in their own offices, during office hours, with maintenance of physician-patient relations, and excellent follow-up of pathological problems found. Particular attention was directed to examination of skin, breasts, cervix, rectum, prostate, and oral cavity. The incidence of cancers found was 4.58 per 100 individuals, or 2.24 per 100 examinations, a very worthwhile yield.

Cancer Tests.—There are very useful laboratory tests in relation to specific tumors, as acid phosphatase in patients with carcinoma originating in the prostate, occult blood in the feces, hematuria, Bence-Jones proteinuria, gastric analysis, 17-ketosteroid determination, radioactive iodine in relation to thyroid tumors. But as yet we have no screening test useful for application to the general population to separate cancer-bearing persons from those free of tumors.

Advances in Surgery

Radiation is of value in eradication of certain specific cancers, but surgical operations are still the principal means of cure of most malignant lesions. It must always be borne in mind that operations for cancer, like radiation, are destructive. The radiologist limits the extent of damage to the tolerance of the skin, erythopoietic and other normal tissues. The surgeon tries to remove tumors with as wide an area of surrounding, possibly infiltrated tissue and lymph-drainage area as he thinks is feasible without endangering life, health or function. Harvey Stone likened this to "burning down the barn to get rid of the rats." We can eradicate more tissue today, but the principle of radical extirpation of tissue is still destructive.

The newer, more extensive resections will probably be attended by a slight increase in long-term survivors, though this remains to be proven. The success of each radical procedure should be bal-

anced against any possible lesser morbidity and mortality of the more classical operations. In his article on hepatic resection for neoplasms Brunschwig mentions the short course of patients having metastases to the liver, and feels that this short course may be an indication for extensive partial hepatectomy. Having seen occasional patients live four or five years in comfort with known hepatic metastases, and knowing the difficulty of assaying even crudely the intra-hepatic extent of metastases, we doubt this heroic procedure will be commonly efficacious.

Cancer of the stomach is being attacked more vigorously, the spleen often being removed with the stomach, along with an increased amount of lymphnode-bearing tissue, and patients miss that tissue little or none. Total gastrectomy is championed by some for all gastric carcinomas in which there is a chance of cure, and there is a place for such an experimental trial. But the anastomosis of esophagus to small bowel is more precarious than gastric stump to jejunum, and patients are more frequently nutritional cripples after total gastrectomy. One great stumbling block to a so-called "good cancer operation" for stomach neoplasms is the short distance from tumor to celiac axis and its surrounding nodes. The operations designed to remove those nodes en bloc, including pancreatectomy, destroy so much tissue of nutritional importance that we are hard pressed to replace these hormones, enzymes and their adjuncts.

In patients with carcinoma of the pancreas subjected to radical pancreatico-duodenectomy Child found the reported operative mortality rate between 20 and 30 per cent for a collected series; reported postoperative survival times for those who survived the operation averaged nine months, and of 150 patients subjected to radical extirpation for pancreatic cancer only three lived for five years. This highlights the fact that for the rank and file we have no good surgical answer to carcinoma of the pancreas. It is unlikely that more radical excisions will increase the survivors. We are seriously in need of a better rat-trap rather than a larger fire in the barn.

Pancreatico-duodenectomy offers more hope to the patient with carcinoma of the ampulla of Vater because the strategic location of the tumor causes early symptoms.

Larger Resections.—Attention has rightly been directed toward the internal mammary chain of lymph nodes in carcinoma of the breast. The high incidence of positive mediastinal nodes, particularly with medial tumors of the breast, makes resection of these nodes a logical experimental advance; if one resects chest wall he must accept an increase in morbidity and perhaps mortality. The method used by the Copenhagen group wherein the internal mammary vessels and nodes are excised without excision of chest wall has very low attendant morbidity, and only time will yield information on its contribution to long term survival.

The ligation of inferior mesenteric vessels and resection of perhaps an added 2 inches of lymphactic chain in removal of the sigmoid colon or rectum for carcinoma might be expected to increase by a few per cent the number of five-year survivors. The adequacy of collateral circulation from the middle colic artery in supplying the terminal portion of the remaining sigmoid colon must be carefully assayed in each case.

An interesting and fruitful application of surgical principles is that of alteration of the physiology, particularly of the endocrines of the tumor-bearing patient. Ovariectomy has been performed for patients with advanced mammary cancer since Beatson introduced this in 1896, and palliation has been achieved in roughly 20 per cent. Huggins introduced the concept of reducing endogenous estrogens still further by adrenalectomy and oöphorectomy, and found that about 40 per cent of his breast carcinoma patients in whom operations and x-ray were not successful had hormone-dependent tumors and enjoyed regression but not cure of their lesions. The efforts of Perault and of Olivecrona and others in hypophysectomy for advanced carcinoma of the breast have yielded some help also. The now classical effects of orchiectomy on metastatic prostatic cancer are well known. Adrenalectomy for prostatic cancer has been nearly abandoned by its originator, Dr. Charles Huggins.

Radiation

External Radiation.—The application of multimillion volt x-ray beams, cobalt-60 sources, the betatron, and cesium have opened the field of radiocurability of tumors still further. The possibilities of treatment of many tumors are being restudied. The beams having high voltage gamma rays or their equivalent roentgen rays without low energy "contamination" do less dam-

age to the skin and more damage to deeper structures, allowing the usual patient to tolerate more radiation therapy. Since the advent of these higher energy beams the radiologist has had to consider skin damage at the port of exit of the beam, no longer just the port of entry; and the development of sarcomas from radiation injury must be considered more seriously. Del Regato aptly points out also that there are biological attributes of some tumors which limit the usefulness of radiation. The melanoblastoma is by nature of its cells resistant to radiotherapy, and in order to damage it slightly one closely approaches the tolerance of other tissues.

Radioactive Isotopes.—The advent of radioactive isotopes in quantity has increased the possibilities of treatment and detection of tumors. Radioactive iodine in relation to thyroid tumors is the outstanding example. Thyroid carcinoma metastases have been detected by tracer doses of I-131 followed by external monitoring. The amount of iodine taken up by such metastases varies greatly, and only about 15 per cent pick up enough to be considered significant in terms of treatment. Other thyroid metastases may take up enough I-131 to reveal their identity, but insufficient to lead to their destruction. Surgical removal of involved tissue remains by all odds the most important weapon in treating this form of cancer, and x-ray therapy is a significant adjunct.

Radioactive phosphorus has long been used by the hematologists in treatment of blood dyscrasias, principally polycythemia rubra vera. The beta ray of phosphorus is short but potent and has led to its trial in treating other diseases. The fact that phoshorus has a large intracellular distribution and is found in actively growing tissue led to its early trial in various tumors, but results have not been therapeutically very effective to date aside from hematologic disorders.

Brain Tumor Localization.—The localization of brain tumors by radioactive isotopes has reached the stage of proven value. The administration of radioactive iodine as sodium iodide, or as tagged diodo-fluoroscein, or tagged human serum albumen has been followed by concentration of the activity within brain tumors, and this can be detected externally by collimated scintillation counters. At the University Hospital those patients having brain tumors have their tumors detected and localized in 60 per cent of the cases by this means. Errors in localization, if there is uptake, are rare indeed. Occasionally a cystic tumor may take up less activity than surrounding tissues. There may be uptake in a tuberculoma. Almost no patients without brain tumors are misdiagnosed as having such lesions. The greatest group of missed tumors are midline ones. Overall accuracy of the method is about 87 per cent.

Brain tumors absorb phosphorus, and differential uptake of P-32 in them may be as high as 140 times greater than the background. Using a radiosensitive probe at operation, the neurosurgeon can localize the extent of most brain tumors with greater accuracy than ever before. The beta rays penetrate the tissue for only about 5 mm.

Other Current Uses of Radioisotopes.—Using the fact that certain heavy metals are bone-seeking, some radioactive isotopes of gallium have been tried to see whether significant amounts of radiation could be localized in tumors of bone including some metastatic ones. There has been some localization in tumors but not enough to be therapeutically significant.

Radioactive colloidal gold is in common use for patients with ascites from metastases to serous surfaces. This has given effective palliation in some cases for as long as two years.

Using human serum albumen tagged with radioactive iodine Stirrett et al have found evidence of hepatic metastases preoperatively with an accuracy up to 94 per cent.

Chemotherapy

The most dramatic example of the effect of hormones on cancer was the use of estrogens in prostatic carcinoma, introduced by Huggins in 1941. The use of estrogens and testosterone in carcinoma of the breast has given some patients relief of symptoms, regression of lesions, and extended life. Adrenal steroids have been found helpful in supportive therapy, and some have found there is a suppressive effect on malignant cells, e.g., acute leukemia.

In 1945 nitrogen mustard, the war gas, was found to have an effect on leukemias, lymphoblastomas, and Hodgkin's disease, and there has been extensive research on compounds related to nitrogen mustard attempting to find drugs which

are less toxic or more effective or effecting other malignant cells. Among the drugs so tested are triethylene melamine, which was found by Gellhorn and others to have a palliative effect in carcinoma of the lung, and triethylene phosphoramide which was thought by Farber to effect melanomas. These compounds are said to produce their effects by inhibition of desoxyribose nucleic acid formation.

After folic acid had been found to be an essential nutrient, analogues of folic acid were proven to have an inhibitory effect on certain neoplastic cells notably acute leukemias as reported by Farber in 1949. It is pertinent to liken the use of this analogue to the usefulness of sulfa drugs which compete with para amino benzoic acid and then block the further metabolic process in certain bacteria; or again it might be compared to the use of isoniazid so presently useful in the treatment of tuberculosis.

Another inroad into the understanding of characteristics of neoplastic cells is exemplified by Burchenal's use of 6-mercaptopurine, which blocks a metabolic pathway for certain cells, notably leukemias.

Although these substances are currently usable clinically, they are probably more important for the light they shed on cellular metabolism, and better drugs will almost surely be forthcoming.

It is unfortunate but understandable that the patients with cancer that receive the greatest attention and excite the greatest interest are those with lesions that cannot be cured. They are patients in whom cancer has advanced beyond the point of cure or in whom attempts at cure have failed. The cured patients are no problem since no one ever hears about them.

The patients with hopeless lesions are deserving of our most careful and sympathetic care. It is cruel and stupid to give any patient a calendar-timed hopeless prognosis. No physician has the ability to look into the future and say that death will take place at a definite time. Our science is not that accurate. We should not lose interest in a patient even though we know that we may lose the fight against disease. We must maintain a keen interest in the day-to-day symptoms, many of which we can assuage. Nothing we do short of a dramatic cure will be more important than to help a hopeless case to die in comfort because of the staunch interest and skill that we have demonstrated to the end. We look to the time when our knowledge will abolish all disease, but in the meantime we must do all we can to alleviate suffering and to comfort the sick even though we know the odds are against us.

In view of the present knowledge the future is filled with hope. Earlier diagnosis of cancer can be attained by careful examination of all the patients that come to us. Early diagnosis will allow present therapeutic measures to give a much higher cure rate. Advances in our knowledge due to modern research permit us to give an optimistic view for the immediate future. Industry, imagination and courage on our part will whip this scourge as we have abolished others equally dreadful in the immediate past.

TUBERCULOSIS IN MICHIGAN

Can empty tuberculosis beds be used? The state's central tuberculosis register shows 2,976 cases of active tuberculosis in homes—1,805 with advanced disease. Currently vacant beds are not even enough to hospitalize these advanced cases.

Michigan tuberculosis hospitals have a total of 5,564 beds for care of tuberculosis patients—all except 430 rated "acceptable." As of December 31, 1954, there were 4,331 patients in these hospitals, leaving 1,233 beds unoccupied.

Facts from the files of the Michigan Department of Health show that tuberculosis stubbornly resists control.

Each week, 100 new tuberculosis cases are reported in Michigan—an estimated 5,200 in 1954—most of them in advanced stages.

There were 7,647 known active cases of tuberculosis in Michigan as of December 31, 1954—4,671 in hospitals —2,976 at home.

Most tuberculosis hospital admissions arriving in advanced stages—one third of them readmissions, returning to repeat treatment.

41 per cent of tuberculosis hospital discharges were against medical advice—treatment not complete—majority with disease uncontrolled.

Less than one-fifth of Michigan's population screened through all known chest x-ray programs.—*Michigan Tuberculosis Association Report,* February, 1955.

Radioactive Phosphorus in the Localization of the Brain Tumors

By Richard C. Schneider, M.D., Henry Pantek, M.S.E. (EE), David G. Freeman, M.D., and Robert G. Farris, M.D.

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NOTHING can be more deleterious to the patient and more troublesome and embarrassing to the neurosurgeon than the inability to locate a brain tumor readily at the time of craniotomy. The aids of electroencephalography, radioactive iodine examination,[2] cerebral arteriography, and ventriculography may have been utilized, but these are only preoperative methods of localization. If the tumor lies in a subcortical site, the neurosurgeon must still rely upon aspiration biopsy with a hollow suction needle or upon gross palpation with an exploring needle to differentiate between normal brain and neoplastic tissue at the operating table. Aspiration biopsy is uncertain and time consuming. If palpation suggests the presence of a tumor, then cortical incision and exploration into the depths of the brain must be performed to confirm the presence of the neoplasm and permit its excision. Unfortunately, aspiration biopsy or the sense of palpation may present a false clue and no lesion may be found. During the past few years, the use of radioactive phosphorus has done much to abolish false localizations and lend a true sense of security to the neurosurgeon.

In this study, radioactive phosphorus (P^{32}) has been administered preoperatively in a series of fifty suspected intracranial neoplasm cases at University Hospital and the surface and subcortical regions of the brain checked with a Robinson-Selverstone probe to register the degree of radioactivity on a counting rate meter. Tumor tissue, in general, will have a proportionately greater uptake of the phosphorus than normal brain, and consequently will exhibit a greater count. The method is not original at this clinic but has proven itself to us to be so effective a tool that further dissemination of knowledge concerning it is deemed advisable.

Moore et al[9] first stained brain tumors with the dye, fluorescein, and upon examining the abnormal tissue under ultra-violet light, found that it emitted a fluorescence. Shortly thereafter, Moore,[10] Moore et al,[11,12] and Belcher[2] reported the use of fluorescein tagged with radioactive iodine, I^{131}, sodium diiodofluorescein in the preoperative localization of intracranial tumors. Selverstone et al,[14,15,16] Selverstone[17] and Sweet[19] injected radioactive phosphorus (P^{32}) intravenously, and after a given time checked the lesion for radioactivity at various depths and locations with a special Geiger-Muller counter in the form of a probe, known as the Robinson-Selverstone probe. They found that there was a significantaly higher uptake of radioactive phosphorus (P^{32}) in the neoplastic cerebral tissue than in the normal brain. Since that time other reports have been presented.[4,18]

Radioactive phosphorus (P^{32}) is a pure beta emitter with half life of slightly over 14 days and an emission penetration of approximately 7 mm. into cerebral tissue. The advantage of this substance is that it penetrates only relatively short distances, ionizes readily but not rapidly, can be stored for a few days prior to its use, requires no special preoperative preparation, and most important, is taken up in considerably larger quantities by neoplastic tissues than normal brain.

Method

In this study, approximately one milicurie of P^{32} (the range has varied at University Hospital between 125 μc and 1 mc) was injected intravenously sometime (two and one-half hours to twenty-four hours) prior to operation. In almost all instances, one or several localizing studies such as ventriculography, arteriography, and electroencephalography have also been performed preoperatively.

In the operating room, the usual inhalation anesthetics were used, supplemented by pentothal or seconal intravenously for gentle induction. The routine osteoplastic craniotomy with incision of the dura was usually performed (in a few instances only a burr hole was made), and the standard Robinson-Selverstone probe (Fig. 1) was inserted into the cerebrum at one or more selected areas. Counts were then registered on the scale of the counting rate meter and the variation in the number of audible clicks gave the surgeon an

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idea of his proximity to the lesion. Readings were first taken on the normal brain and then as the probe was inserted readings were taken centimeter by centimeter into the subcortical areas to the tumor. Where the tumor lay under or in the optic chiasm or some other structure which could not be pierced with a probe for fear of causing irreparable damage, readings were taken on adjacent normal cortex and then on the surface of the tumor.

P^{32} Radiation Dosage.—In administering the radioactive isotope the health aspects of radiation exposure were also considered. Patient and personnel dosages were estimated and measured. The amount of radiation per gram of tissue received by the patient can be estimatd by using the equation[8]

$$D_B = 88\ E_B TC$$

where

D_B = total dose in equivalent roentgens (e.r.)
E_B = average beta ray energy per disintegration. 1.69 mev for P^{32}.
T = half life in days. 14.3 days for P^{32}
C = concentration of isotope in microcuries (μc) per gram of tissue.

The estimate of the total dose is made under the assumption that the isotope uniformly distributes itself over the entire body and that none is eliminated. The average weight of the patient is taken as 70 kg. and dose given is 1 millicure (mc = 1,000 μc). The total dose received then is

$$D_B = 88 \times 1.69 \times 14.3 \times \frac{1.000}{70,000} = 27.2 \text{ e.r.}$$

The permissible dose is taken as 0.3 r per week or 0.043 r per day. For an average life (average life = 1.443 x half life) of 21 days the radiation dose received per day from 1 mc. of P^{32} is approximately 1.3 e.r. Actually not even bone, where the P^{32} concentrates, attains this dose.[8] About half of this dose at most, is received by any type of tissue. Biological elimination further reduces it by approximately one half. Also most of the activity has decayed in twenty-one days. It must be remembered, too, that the 0.3 r per week permissible dose is a limit set for continuous exposure year in and year out.

Measurements were taken to determine the personnel exposure dosage when attending the patient. A maximum of 800 counts per minute (CPM) was registered on our counting rate meter when the patient was surveyed by direct contact, over various parts of the body, with a mica window tube. Using the approximation

Fig. 1. Counting rate meter with attached cable, pre-amplifier, and Robinson-Selverstone probe. The tape measure shown is in inches.

20,000 CPM is equivalent to 5 milliroentgens per hour ($1 \text{ mr} = \frac{1}{1,000} \text{ r}$) the exposure dose turns out to be about 10 mr per forty-eight-hour week. This is estimated on the basis that the personnel is in direct contact continuously with the patient's body. This exposure of course is well within the tolerance dose of 300 mr per week.

Sometimes the patient is given I^{131} for preoperative localization[7] and then later it becomes desirable to administer P^{32} for the operative demarcation. This means two doses; 2 mc. of I^{131} and 1 mc. of P^{32}. In the exposure estimate the gamma radiation of the I^{131} is neglected, since it is presumed to have negligible effect.[5] The beta radiation is of low energy (0.6 mev), and the half life is eight days approximately. Using the above equation again, it is estimated that the patient receives 1 e.r. per day during the average life of the I^{131}. Here again the estimate is high and the same discussion applies to I^{131} as for P^{32}. It might be mentioned that the I^{131} concentrates in the thyroid and the P^{32} in bone. Hence the dosage is pretty well distributed. Therefore, in view of our estimates and findings of others[20] it is felt the patient and personnel are not endangered from the health physics standpoint.

It has been the practice in this hospital to wait at least a week after I^{131} administration if possible, before giving radioactive phosphorus for

SUMMARY OF CASE DATA

Case	Initials	Age	Tumor Type	Location of Tumor	Dosage of P^{32}	Hours Uptake Interval	Normal Brain CPM*	Tumor CPM*	Uptake Ratio†
1	M.M.	28	Meningioma meningiotheliomatous	Rt. parietal	1 mc‡	4	380 (Surface)	4700 (2 cm)	12.3
2	B.T.	37	Meningioma fibroblastic	Lt. parietal	1 mc	10	90 (1.5 cm)	3100 (4 cm)	34.4
3	D.M.	35	Meningioma fibroblastic	Lt. sphenoid ridge	1 mc	5	75 (Surface)	1800 (4 cm)	24.0
4	W.F.	59	Meningioma psammomatous	Rt. fronto-parietal	1 mc	7½	400 (Surface)	5000 (1 cm)	12.5
5	M.B.	45	Meningioma fibroblastic	Lt. parietal parasagittal	1 mc	5	240 (Surface)	1050 (5 cm)	4.3
6	I.B.	45	Meningioma meningotheliomatous	Tuberculum sella	1 mc	14	110 (Surface frontal lobe)	960 (1 cm) in tumor	8.7
7	B.O.	51	Meningioma	Lt. sphenoid ridge	1 mc	6	160 (Surface)	2700 (2 cm)	16.8
8	H.V.	51	Mengioma mengiotheliomatous	Olfactory groove	1 mc	18 plus	250 (Surface)	2300 (2 cm)	9.2
9	Y.D.	48	Meningioma	Rt. frontal	1 mc	22	150 (Surface)	1600	10.6
10	G.B.	55	Acoustic neuroma	Rt. post. fossa	1 mc	4	480 (Surface cerebellum)	1020 (tumor)	2.1
11	E.F.	58	Acoustic neuroma	Rt. post. fossa	1 mc	3½	110 (Surface cerebellum)	1200 (2 cm)	10.9
12	E.F.	43	Acoustic neuroma	Lt. post. fossa	1 mc	13	110 (Surface)	1500	13.6
13	F.B.	41	Pituitary adenoma chromophobe	Sella	1 mc	17½	900 (Surface)	3000 (2 cm)	3.3
14	T.C.	30	Pituitary adenoma chromophobe	Sella	1 mc	17½	270 (Surface)	1500 (2 cm)	5.5
15	E.H.	48	Pituitary adenoma	Sella	1 mc	17	440 (Surface)	1110 (1 cm)	2.5
16	L.W.	36	Glioblastoma multiforme	Corpus callosum	1 mc	3	200 (Surface)	320	1.1
17	L.W.	21	Glioblastoma multiforme	Lt. temporal	1 mc	18½	240 (Surface)	1400 (4 cm)	5.8
18	V.H.	61	Glioblastoma multiforme	Rt. parietal	1 mc	5	400 (Surface)	2100 (c cm)	5.2
19	M.M.	48	Glioblastoma multiforme	Rt. parietal	1 mc	16½	100 (Surface)	1700 (4 cm)	17
20	J.K.	39	Glioblastoma multiforme	Lt. fronto-temporal	1 mc	4½	350 (Surface)	3800 (2 cm)	10.1
21	F.V.	62	Glioblastoma multiforme	Lt. temporal	1 mc	4	280 (Surface)	2300 (5 cm)	8.1
22	I.P.	44	Glioblastoma multiforme	Lt. frontal	1 mc	12	110 (Surface)	2400 (4 cm)	21.8
23	E.O.	52	Glioblastoma multiforme	Lt. parietal	1 mc	13½	120 (Surface)	1500 (1 cm)	12.5
24	L.J.	37	Glioblastoma multiforme	Lt. frontal	1 mc	12	250 (Surface)	2700 (2 cm)	10.4
25	C.W.	60	Glioblastoma multiforme	Corpus callosum	1.1 mc	7	170 (Lt. Surface Rt. Surface)	3500 (5 cm)	17.5
26	W.H.	56	Glioblastoma multiforme	Lt. temporal	800 γc§	21	130 (Surface)	900 (3 cm)	6.9
27	E.S.	46	Astrocytoma	Rt. fronto-temporal	400 γc	5	110 (3 cm)	250 (Surface)	2.3
28	F.C.	35	Astrocytoma	Lt. frontal	1 mc	10	140 (Surface)	900 (3 cm)	6.4
29	I.S.	25	Astrocytoma	Rt. frontal	1 mc	2½	90 (Surface)	300 (3 cm)	3.3
30	D.W.	34	Astrocytoma	Lt. temporal	1 mc	12½	100 (Surface)	1000 (4 cm)	16
31	O.T.	41	Oligodendroglioma	Rt. fronto-parietal	500 γc	24	190 (Surface)	1050 (tumor edge)	5.5
32	W.H.	55	Oligodendroglioma	Rt. parietal	1 mc	2½	90 (Surface)	250 (2 cm)	2.7
33	T.S.	11	Choroid plexus papilloma	Rt. thalamus	500 γc	6	370 (Surface)	1200 (2 cm)	3.2
34	D.J.	11	Spongioblastoma polare	Pons	1 mc	6	30 (Surface)	280 (2 cm, along pontine edge)	9.3
35	F.M.	67	Spongioblastoma polare	Rt. frontal	1 mc	5	180 (Surface)	3400 (6 cm)	18.8
36	N.G.	6	Spongioblastoma polare	3rd. Ventricle	1 mc	2½	250	960	3.8
37	J.B.	13	Spongioblastoma polare	Optic chiasm	1 mc	21	170	750	4.4
38	K.C.	16	Ependymoma	Rt. parietal	500 γc	12	150 (Surface)	1440 (3 cm)	9.5
39	K.P.	2½	Ependymoma	Lt. fronto-parietal	1 mc	12	340 (Surface)	3700 (4 cm)	10.1
40	S.P.	34	Ependymoma	4th Ventricle	1 mc	2½	250	1000	4.
41	J.F.	12	Neuroblastoma	Lt. parietal	1 mc	5	100	2500	25.0
42	E.M.	51	Neuroblastoma	Lt. parietal	1 mc	5	150	3500 (6 cm)	23.3
43	J.S.	1½	Neuroblastoma	Rt. fronto-temporal	125 γc	4	350	1350	3.8
44	V.R.	62	Metastic medullary carcinoma	Temporal	1 mc	5½	100 (Surface)	6000 (4 cm)	60
45	I.B.	62	Metastic adenocarcinoma	Rt. parietal	1 mc	4	160 (Surface)	1700 (edge)	10.5
46	D.R.	51	Metastic bronchogenic neoplasm	Rt. parietal	1 mc	90	80 (Surface)	420 (3 cm)	5.2
47	J.L.	16	Craniopharyngioma	Beneath optic chiasm	1 cm	6	600 (Surface brain)	690 (Surface chiasm)	1.1
48	H.B.	45	Cerebral abscess	Lt. parietal occipital	1 mc	6½	100 (2 cm)	1800 (3 cm)	18
49	C.L.	61	Cerebral thrombosis	Lt. parietal temporal	1 mc	10	60 (Surface)	80 (depths)	1.2
50	C.C.	32	No tumor	3rd. Ventricle	750 γc	14	300 (Surface)	1400 (Foramen Munro)	4.6

*Counts per minute.

†$\frac{\text{Tumor CPM}}{\text{Normal Brain CPM}}$ = Uptake Ratio

‡mc = millicurie (1 millicurie = $\frac{1}{1000}$ curie)

§γc = microcurie (1 microcurie = $\frac{1}{1000}$ mc)

operative tumor demarcation. In that time the radiation is reduced to half its original value. This reduces the total dosage per day. Whenever possible the patient is exposed to as little radiation as is practicable under the circumstances.

Analysis of Data

The case data have been summarized in the accompanying table.

The data compiled were examined for (1) tumor type versus uptake ratio, (2) uptake ratio

versus hours uptake, (3) tumor count, and age for a particular tumor type, and (4) location of probe site and count.

1. *Tumor Type versus Uptake Ratio.*—Since twenty-two types of lesions were studied in our fifty cases it is difficult to arrive at any definite conclusions. It is suspected that there isn't a precise relationship between tumor type and uptake ratio. A probability relation might be established if a very large number of cases were studied. With the data at hand, it can be said that meningiomas and glioblastomas have in general a high uptake ratio and high tumor site count. This is in agreement with the findings of Ashkenazy, Davis and Martin,[1] and of Kahn et al.[7] Neuroblastomas and ependymomas seem to fall in this category also. It is interesting to note that the astrocytomas and pituitary chromophobe adenomas have a low ratio but a high tumor count. Since the ratio is obtained by dividing the tumor count by the normal brain count, one is compelled to wonder why the normal brain count in cases of this sort is so high.

To illustrate the difficulty encountered in this study, take for example the two acoustic neuroma cases (Cases 10 and 11). The patients are approximately the same age, the hours uptake nearly the same, the tumors located in the same area, and yet the ratios differ by a factor of five. The difference is in the normal brain counts. It appears that the difference in normal count is not due to the location of the site. The beta radiation is absorbed by about 7 mm. of tissue therefore the nearness or remoteness of the tumor would not contribute appreciably to the normal count. The normal count is taken a considerable distance away from the tumor site and on the surface of the brain. These tumors were located in the posterior fossa, a good distance away. The instrumentation of the counting and geometry of the probe largely contributed to this discrepancy.

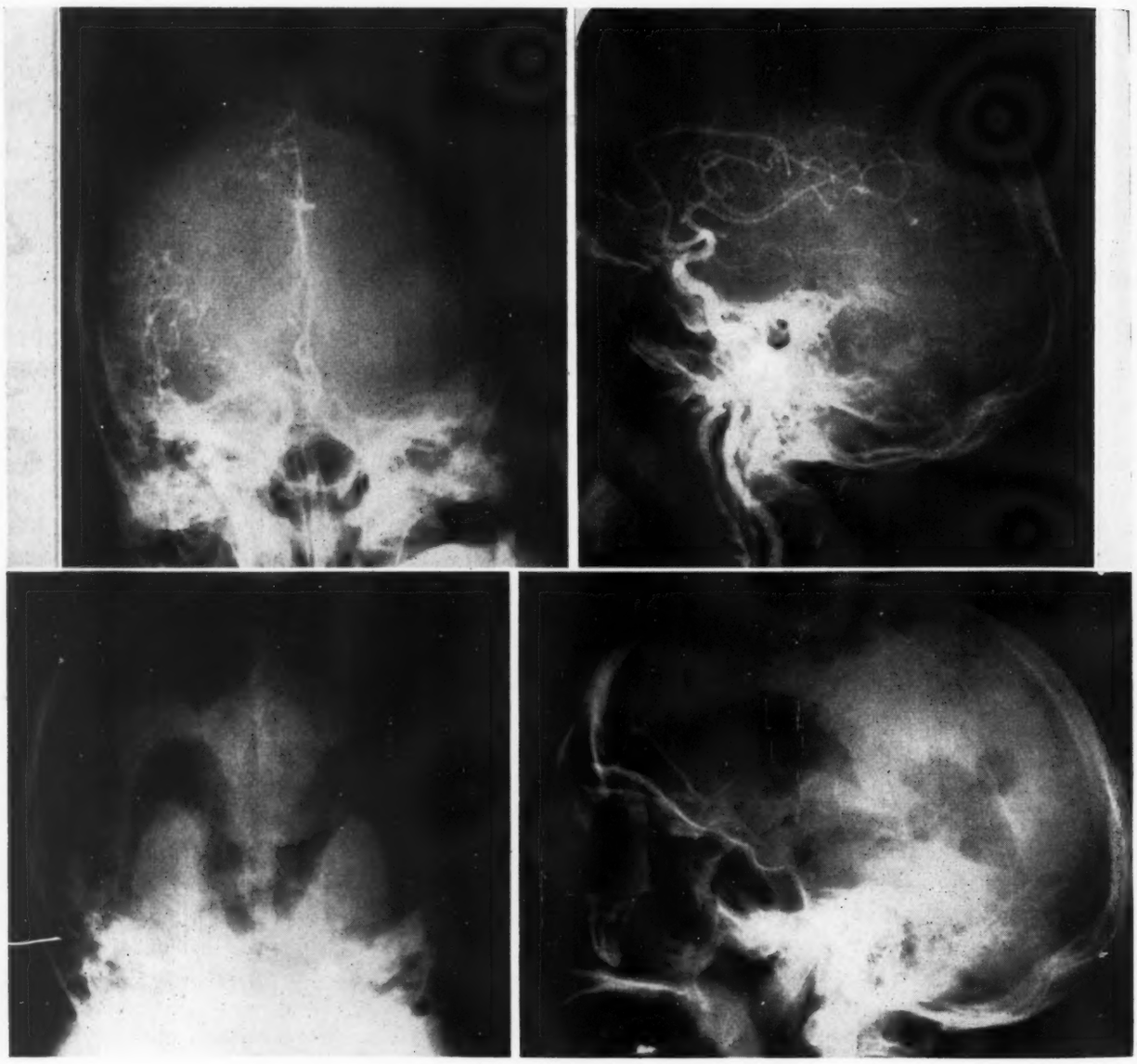
The counting rate meter used (a decimal scaler is not practical in this application) in these localizations has a minimum statistical error of 2 per cent. To get an accurate reading it is necessary to wait as long as two minutes. About twenty-five readings are taken during an operation. It would take fifty minutes for twenty-five readings and another twenty-five minutes for locations of sites and miscellaneous preparations. An hour and a quarter is a long time for mapping. The counting time was reduced to 10 seconds for reading. The 2 per cent accuracy, therefore, was not attained, because not enough time was allowed for the build-up of counts for averaging by the instrument. Our experience shows that about 25 per cent error in readings can be expected.

The geometry[7] of the probe with respect to normal brain site can vary the readings up to 50 per cent. This results in a total error of 75 per cent. Going back to our example, the acoustic neuromas, the normal brain count is 480 and the tumor count is 1020 in the one case (Case 10). In the other case (Case 11), the normal brain count is 110 and the tumor count is 1200. Simple arithmetic shows that for the two normal count readings to agree, it is necessary to increase the lower reading (Case 11), 110 counts, by 63 per cent and reduce the higher reading (Case 10), 480 counts, by 63 per cent. An error of 63 per cent could do this. This is within the error of 75 per cent which we anticipate. Since the discrepancy is in the normal brain count readings, the geometry in these readings seems to be very important. The response of the probe to a radiation source follows closely the cosine law. When the cylindrical axis of the probe is parallel to the radiation rays, the count is nearly zero. The count is maximum when the axis is at right angles to the rays. The geometry of the probe with respect to the radiation is unimportant when the probe is completely surrounded by tumor mass. Then only the meter reading error can be responsible for any discrepancy in the tumor count.

2. *Uptake Ratio versus Hours Uptake.*—In the glioblastoma cases there is no apparent advantage in waiting longer than four hours to take readings. The astrocytomas, however, seem to give a higher tumor count when the intervals are longer than four hours. In general it can be said that higher uptake ratios occur more consistently for uptake intervals of five hours or more.

3. *Tumor Count and Age.*—No consistent relationship could be found between tumor count and age of patient. It appears that in most cases for the same tumor type, location, and number of hours uptake interval, the older patient has the higher count.

4. *Location of Probe Site and Count.*—The diffuse and space occupying lesions so change the anatomy that it is very difficult to attempt to corre-



Figs. 2, 3, 4 and 5.—*Case 25.*

Fig. 2. Posterior-anterior left internal carotid arteriogram showing normal position of vessels.

Fig. 3. Lateral left internal carotid arteriogram demonstrating *minimal* depression of calloso-marginal branch of anterior cerebral artery.

Fig. 4. Posterior-anterior ventriculographic view showing corpus callosum tumor spreading the lateral ventricles.

Fig. 5. Lateral ventriculographic view exhibiting impingement of corpus callosum tumor on middle third of lateral ventricles.

late the count to the anatomical site. In analyzing these data, the errors in normal count geometry and in instrumentation make it difficult to make any but the most gross comparisons. However, for merely locating the lesion, the instrumentation is adequate.

Case Examples

The diagnosis of brain tumor was confirmed in forty-six of the fifty patients with suspected intracranial lesions using radioactive phosphorus, P^{32}. The other four cases are summarized briefly here. In *Case 47* a craniopharyngioma had so ironed out and displaced a prefixed optic chiasm upward that the Robinson-Selverstone probe could not be inserted next to the chiasm to reach the inaccessible tumor. There was no significant uptake from the chiasmal surface sufficient to diagnose the presence of the underlying lesion. The conclusion was correctly drawn that the tumor was not a primary one of the optic chiasm or nerves. In *Case 49,* there was no significant uptake ratio, and

the diagnosis was again correct for the patient was found to have a cerebral thrombosis. In *Case 48,* there was a marked uptake ratio, and an intracranial lesion was found, but it was discovered to be a cerebral abscess rather than a neoplasm. In *Case 50,* this case exhibited the only false positive or significant uptake ratio without a definite neoplasm (or abscess) being demonstrated. The false uptake was believed due to the proximity of the probe to the choroid plexus.

The vast majority of the fifty patients had a good surgical recovery, but this is not the main topic of this paper. The cases which will be discussed in detail are a group of patients with intracranial lesions not all of whom did well. But in a study of this type, much information is to be gained by a correlation of the clinical studies with the autopsy findings. Both successful and unsuccessful surgical cases are presented to show the more interesting facets of the use of radioactive phosphorus P^{32}.

Case 25.—C.W., a sixty-year-old right-handed die setter, was well until May 1, 1953. He developed mental changes and had marked rage states during which he beat his wife, knocked dishes from the table and became extremely difficult to handle. He had progressive weakness in his right leg, then in his right arm, and gradually developed a partial expressive aphasia. On admission to University Hospital on June 13, 1953, his vital signs were all within normal limits. The pupils were equal with no evidence of papilledema. There was some paresis of upward gaze, a right central facial palsy, paresis of the right arm, and marked extensor rigidity of both legs. Cortical extinction was noted on the right side of the body. All deep reflexes were hyperactive and there were bilateral extensor plantar reflexes.

Skull roentgenograms were normal. A left internal carotid arteriogram (Figs. 2, 3) showed no definite lesion. Ventriculogram suggested a tumor of the corpus callosum (Figs. 4, 5). Radioactive phosphorus, 1.6 millicuries, was given intravenously at 8:30 a.m., on June 16, 1953. A transparietal osteoplastic craniotomy was performed with the flap based on the left temporal muscle. On opening the dura and inserting the Robinson-Selverstone probe at 2:15 p.m., the greatest count was noted at 5-centimeter depth to the right of the falx behind the interaural plane. At 4-centimeter depth a soft friable glioblastoma multiforme was encountered and a 3 cm x 3 cm x 7 cm internal decompression was made. Postoperatively the patient developed hyperthermia, decerebrate rigidity and expired on June 17, 1953. At postmortem examination an extensive corpus callosum tumor was found (Fig. 6).

Comment.—This patient exhibited a right-sided hemiplegia which might have led to rather extensive exploration of the left or dominant hemisphere, with the possibility of severe neurological sequelae if the patient had survived. The ventriculogram suggested, and the use of the P^{32} radioactive phosphorus with the Robinson-Selverstone probe demonstrated, that there was marked tumor infiltration on the ipsilateral side with the hemiplegia. Adequate internal decompression could be performed on a nondominant hemisphere with the hope of avoiding more extensive neurological disability. Unfortunately, in this case, the extent of the tumor was such that it mattered little from which hemisphere the tumor was removed.

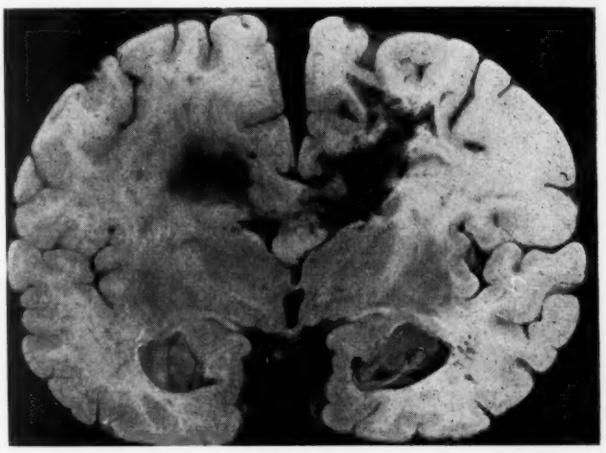
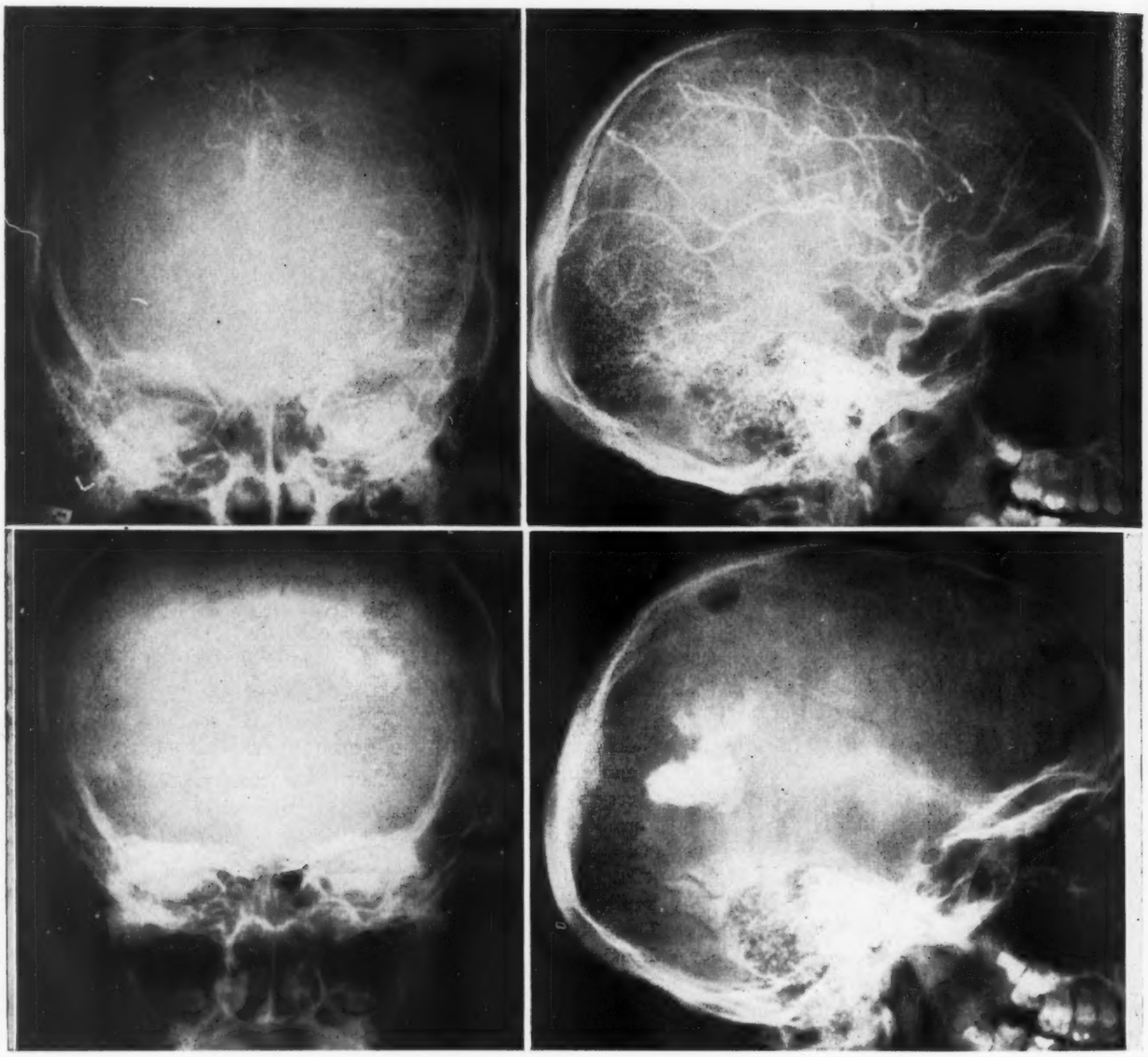


Fig. 6. *Case 25.*—Postmortem specimen demonstrating bilateral hemispheric involvement by a corpus callosum tumor. Probe tract and site of operative biopsy visualized on the right side.

Case 41.—J.F., a twelve-year-old girl, was admitted to University Hospital on February 8, 1954, with a history of convulsive seizures of two years' duration. These had been treated only by chiropractic manipulations until one month prior to hospitalization. Convulsions occurred at the rate of two or three a day. They were preceded by a moan. The child fell to the floor, urinated, vomited and had violent generalized twitchings. The seizures were followed by a markedly somnolent state. The only positive neurological findings were two diopters of papilledema bilaterally, a right central facial weakness and a questionable weakness of the right upper extremity. Skull and chest roentgenograms were normal. An electroencephalogram indicated the presence of a left temporoparietal lesion. A left internal carotid arteriogram was read as normal (Figs. 7, 8). One millicurie of radioactive phosphorus P^{32} was given six hours preoperatively. A burr hole was made in the left posterior parietal area over the site suggested by the electroencephalogram. The Robinson-Selverstone probe was inserted to a depth of two centimeters where the counting rate increased to twenty fold over the count found at the surface of the brain. Upon re-



Figs. 7, 8, 9 and 10. *Case 41.*

Figs. 7 and 8. Posterior-anterior and left lateral carotid arteriograms which were originally read as normal.
Figs. 9 and 10. Posterior-anterior and left lateral views of skull after instillation of thorotrast into cyst of tumor in parieto-occipital region.

moval of the probe, there was a gush of old dark cystic fluid. A needle was re-inserted, part of the fluid removed and a few cubic centimeters of thorotrast were injected. Roentgenograms demonstrated a large, ragged cystic cavity (Figs. 9, 10). A left parieto-occipital craniotomy was performed with subtotal removal of a massive astrocytoma. X-ray therapy was administered postoperatively, and the patient was finally discharged from the hospital with only a right homonymous hemianopsia.

Comment.—This case demonstrated nicely how the probe may be inserted through a burr hole locating a tumor without additional diagnostic studies. It also illustrates how misleading it may be to exclude an intracranial lesion on the basis of one study, for in this case a left internal carotid arteriogram was reported to be within normal limits

Case 9.—Y.D., a forty-eight-year-old right-handed housewife, was admitted to University Hospital on February 22, 1954, complaining of severe frontal headaches of seven months' duration. These were often of a throbbing character and were accompanied by nausea and vomiting. At the peak of the headache there was weakness in the right foot. With the exception of bilateral low grade papilledema, the remainder of the neurological examination was normal. The chest and skull roentgenograms were normal. An electroencephalo-

Figs. 11 and 12. *Case 9.*

Fig. 11. Posterior-anterior view of right carotid arteriogram demonstrating displacement of right anterior cerebral artery across the midline in the frontoparietal area.

Fig. 12. Lateral view of right carotid arteriogram demonstrating spread between the anterior cerebral and middle cerebral arteries suggesting right parietotemporal lesion.

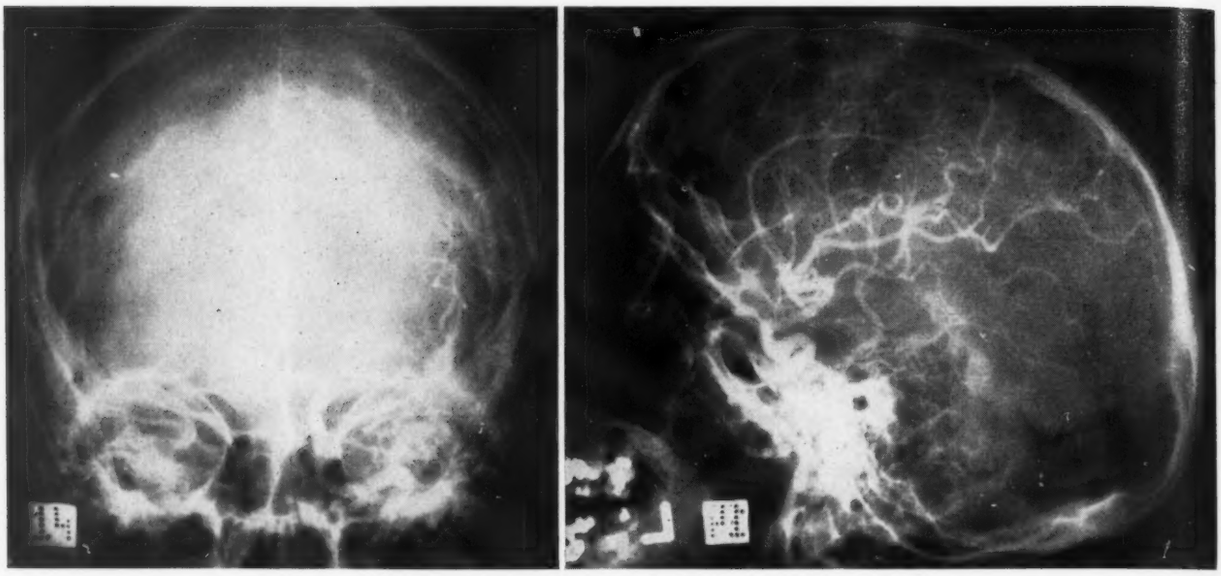
gram suggested a space occupying lesion parasagitally near the right prefrontal area. Bilateral internal carotid arteriograms indicated an avascular right frontal lesion (Figs. 11, 12). At the time of right frontal osteoplastic craniotomy March 22, 1954, a large right frontal meningioma was totally removed. One millicurie of radioactive phosphorus P^{32} had been given twenty-two hours prior to the operation. At the operating table, there was a 10.6 fold differential between tumor and normal brain tissue. The tumor was found to infiltrate the bone flap, and it was difficult to tell grossly whether total removal of tumor had been accomplished. By scanning the bone flap with the Robinson-Selverstone probe, it was possible to identify the site where the tumor had invaded the bone and enable more accurate and complete excision. The patient was discharged with gradual subsidence of her papilledema, and no other neurological findings.

Comment.—The probe definitely aided in more complete removal of the tumor, and did away with the necessity of discarding the entire bone flap.

Case 34.—D.J., an eleven-year-old right-handed boy was first admitted to University Hospital on October 26, 1954, with a five weeks' history of bifrontal headaches, diplopia and vomiting. These symptoms had been preceded by a small furuncle in the left nostril, with considerable swelling of the nose. There was papilledema in the left eye, a left fifth, seventh and eighth cranial nerve involvement, ataxia on left finger to nose testing a positive Romberg with falling to the left side, symmetrical hypoactive reflexes, an equivocal right extensor plantar reflex sign, and marked instability in

Fig. 13. *Case 34.*—Postmortem specimen demonstrating massive hemorrhagic infiltrative lesion of the pons. It should be emphasized that the Robinson-Selverstone probe was not inserted in this region but merely placed alongside of the pons.

gait. Skull roentgenograms showed a clouding of the left maxillary sinus. An electroencephalogram suggested a posterior fossa lesion. The parents were advised that the patient probably had a pontine tumor, but that an infectious process could not be excluded. There was no response to massive doses of antibiotics, and the patient was discharged from the hospital for a time to be followed neurologically as an out-patient. However, he became progressively worse and was hospitalized again on December 30, 1953. After thorough discussion and in spite of a hopeless prognosis, the parents wished to have exploration performed. Ventriculograms revealed a posterior displacement of the fourth ventricle and the aqueduct of Sylvius. One half a millicurie of



Figs. 14 and 15. *Case 50.*

Fig. 14. Posterior-anterior view of left internal carotid arteriogram which was read as normal.

Fig. 15. The lateral view suggested upward displacement of the middle cerebral artery with the possibility of a temporal lesion but this is not borne out by the posterior-anterior view.

radioactive phosphorus P^{32} was given preoperatively at 7:30 a.m. on December 31, 1953. A suboccipital craniotomy was performed at 3:00 p.m. The Robinson-Selverstone probe was inserted on the surface of the cerebellum and then along the grayish red mass on the left side of the medulla. There was a six-fold greater uptake in the paramedullary material than on the medullary surface and in the normal cerebellum. Any excision of such a medullary lesion or even biopsy, is dangerous so merely the counts were recorded. The patient succumbed on January 2, 1954. Postmortem examination disclosed an extensive astrocytoma, Grade 2, of the brain stem (Fig. 13).

Comment.—This case has shown that it may be possible by Robinson-Selverstone probe to differentiate tumor on the surface of a vital portion of the brain where biopsy may be absolutely contraindicated.

Case 50.—C.C., a thirty-two-year-old, right-handed woman, was admitted to the hospital on March 23, 1954, complaining of severe left frontal headache. Ten days prior to admission she had had a lumbar puncture elsewhere which exhibited a pressure of 350 mm. of water. At that time a left internal carotid arteriogram was found to be normal. Three days prior to hospitalization she suddenly had projectile vomiting and became unconscious for four or five hours and upon recovery had a transient right hemiparesis. Entrance examination disclosed the following positive neurological findings: some impairment of memory for recent events, bilateral papilledema, more prominent in the left eye, slight right central facial palsy, slight drift of the outstretched hands while the patient had her eyes closed, and a postive extensor plantar reflex on the right side.

Skull x-rays showed no shift of the minimally calcified pineal gland. Visual fields were normal. Bilateral internal carotid arteriograms were normal (Figs. 14, 15). The patient was given one millicurie of radioactive phosphous (P^{32}) 14 hours preoperatively. During bilateral ventriculography the ventricular cerebrospinal fluid was found to be under increased pressure and the ventricles markedly and symmetrically dilated (Fig. 16). A dilated third ventricle could be seen which filled well on a brow-up, (Fig. 18) but not so well on a brow-down film (Fig. 17). There was no evidence of filling of the fourth ventricle or aqueduct.

A right frontotemporal craniotomy was performed on March 24, 1954. The dilated right lateral ventricle was entered through a right frontal cortical incision on a plane anterior to the coronal suture. The right foramen of Munro could be visualized and a yellow cystic "apple jelly" appearing nodule lay medial to it with the choroid plexus lateral to it. Upon checking the normal cortex with the Robinson-Selverstone probe, the count was found to be 300 counts per minute compared to a count of 1,400 counts per minute when the probe was placed upon the mass in the ventricle. The differential ratio of 4.6 in the abnormal tissue suggested the presence of tumor. Upon attempting to cauterize the base of this tissue so it could be removed, there was a snapping sound and the lesion disappeared up the suction tip. Further investigation through the large hole in the septum pellucidum revealed a normal appearing left lateral ventricle. No further attempt at biopsy was made for fear of causing irreparable damage to the floor of the lateral or third ventricles. The wound was closed with the feeling that there was an inoper-

Fig. 16. Both lateral ventricles and the third are visualized.

Fig. 17. Brow-down film showing some air in third ventricle but none in the aqueduct or fourth ventricle suggesting possible obstructive lesion in posterior third ventricle.

Fig. 18. Brow-up film showing the left foramen of Munro and the anterior portion of the third ventricle.

Figs. 16 to 18. *Case 50.*—Ventriculograms exhibiting generalized dilitation of the ventricular system.

able neoplasm. The patient succumbed at 9:00 a.m. on March 26, 1954.

Postmortem examination revealed a large midbrain which was markedly edematous with the opening of the aqueduct scarcely visible. Microscopic examination of the sections of the brain showed a very marked edema and congestion. The tegmentum displayed edema and a "spongy" state. The aqueduct showed abundant debris in its lumen. The ependyma of this formation was swollen, and there was evidence of gliosis of the subspendymal plate. No tumor could be identified. A bilateral tentorial and foramen magnum pressure cone was found.

Comment.—This is an extremely unfortunate case. It is the only one in the series where a false positive uptake of radioactive phosphorus was found without biopsy or postmortem evidence of a neoplastic lesion. At the time of this operation approximately thirty-four patients with intracranial neoplasms had been operated upon and the Robinson-Selverstone probe used. In all of these patients tumor had been found where there was a definite increased differential in the counting rate over tumor compared to the normal brain. The 4.6 differential ratio in this case suggested adequate evidence of tumor and gave the surgeon the false sense of security in the diagnosis of inoperable tumor because the depth of the lesion precluded more complete biopsy. The reason for the error is not apparent. Perhaps the lesion which was coagulated and disappeared up the suction tip was

a colloid cyst which had been obstructing the third ventricle. Perhaps the elevated count was due to proximity to the choroid plexus where the uptake of radioactive phosphorus P^{32} might be greater. Perhaps the dilatation of the ventricular system was due to a partial aqueductal stenosis, but this should not form a basis for an increased uptake in radioactive phosphorus. In retrospect, a Torkildsen procedure with a catheter run from the lateral ventricle into the subarachnoid space at the basilar cistern might have saved this patient's life.

Further study is planned to determine differential ratio of uptake of phosphorus P^{32} in the choroid plexus compared to the normal brain.

Summary

Radioactive phosphorus P^{32} was injected intravenously at a given interval preoperatively in fifty patients with suspected intracranial neoplasms. By exploring the brain with a Robinson-Selverstone (Geiger counter) probe, the diagnosis of intracranial neoplasm was correctly made in forty-six cases. In two other cases, there was insufficient evidence of an increased phosphorus (P^{32}) uptake ratio; in one instance the tumor was inaccessible to probing and in the other patient a cerebral thrombosis was demonstrated. There was one instance in which a cerebral abscess was found instead of an intracranial neoplasm. The one remaining case presented the only false positive uptake ratio suggesting the presence of a tumor and none was found. It was believed that the probe had touched the choroid plexus resulting in an abnormal uptake ratio.

The calculation of radiation dosage has been discussed, and the data of the series of cases analyzed and commented upon.

Five cases were presented in detail to demonstrate the advantages and shortcomings of the procedure.

In conclusion, a new and effective weapon has been placed in the surgical armamentarium of the neurosurgeon, which when properly employed is an invaluable adjunct in gaining additional information on the location, extension and completeness of excision of intracranial tumors.

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Hodgkin's Disease

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I SELECTED Hodgkin's disease for presentation at this meeting for several reasons:

1. The attitude of the profession relative to this disease is, as a rule, one of utter discouragement and hopelessness, similar to that when faced by leukemia, lymphosarcoma or generalized cancer.

2. In most instances, this attitude is fully justified. However, there are not infrequently exceptions of a relatively benign course, and, what is even more important, the course of at least some of these exceptional cases seems to be determined by therapy undertaken early in the disease.

3. Early diagnosis of Hodgkin's disease is as important as in cancer and any improvement in this respect is entirely in the hands of the medical profession.

4. Further progress in the knowledge of the natural history of Hodgkin's disease depends largely on the interest and cooperation of the practicing physician.

Comparison of our present-day knowledge of Hodgkin's disease with what was known about it twenty-five years ago suggests that though basic information remains about the same, the results of therapy relative to prolongation of useful and enjoyable life are noticeably better. This has been brought about by at least four factors: partly by new therapeutic agents, partly by improved methodology and enhanced safety in the application of roentgen rays, partly by the recognition that Hodgkin's disease is frequently or always of unicentric origin, and last but not least, by better appreciation of the still vague but gradually emerging host factor.

It is entirely outside of my sphere of competence as a pathologist to speak about therapy of Hodgkin's disease, but I hope to justify my presence here by discussing some of the other problems involved in this condition in which the pathologist plays an important part. I have reference to the fact that of the three basic problems in Hodgkin's disease—diagnosis, therapy and the final outcome—the pathologist has a significant contribution to make to the first and last.

The diagnosis of Hodgkin's disease is largely the domain of the pathologist. The clinical diagnosis is a presumption requiring confirmation. Rational therapy of Hodgkin's disease without pathologic diagnosis is not and cannot be carried out. At the end, no matter how successful the treatment, it is the pathologist's obligation and opportunity to explain what has happened and why.

Hodgkin's disease is a condition teeming with many questions still to be answered by the investigator. One of them is the peculiar role of the host reaction which seems to hold the answer to the unexplained differences in the reactions of seemingly identical conditions of different patients to the same therapeutic intervention. It may well be that a study of the host will help to understand many of the baffling mysteries of this disease.

What is Hodgkin's disease?

It is a disease of lymphatic tissue, wherever it is found, mainly in the lymph nodes, spleen and in many other regions of the body. Lymphatic tissues consist of two main elements: lymphocytes and reticulum cells. Reticulum cells form a framework, in the meshes of which the lymphocytes are resting. Hodgkin's is a disease of reticulum cells. Lymphocytes are only secondarily involved.

The name, Hodgkin's disease, is most appropriate because it is noncommital.

Clinical Picture

The clinical manifestations include, in approximate order of frequency: enlargement of lymph nodes (in 80 per cent of the cases), weight loss, anorexia, weakness and fever. Other symptoms depend on local involvement and on individual host reactions. Variability of signs and symptoms, spontaneous remissions and exacerbations are a part of the picture.

Several varieties of pyrexia have been described. The so-called Pel-Ebstein form is characterized by prolonged periods of sustained high fever associated with sweats and alternating with intervals of normal or subnormal temperatures. Bouts of fever have been correlated with involvement of deep lymph nodes. It is of interest that effective radiation and other therapy is usually

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followed by prompt decrease of fever, gain of weight, and relief of pruritus. No anatomic correlation has been found for the itching.

Hodgkin's disease can be classified variously, depending on the approach.

I. Three stages are recognized in the natural history of the disease:

1. A prodromal stage, or period of latency. Slightly enlarged superficial or deep lymph nodes may be present. Pruritus may be the only complaint.
2. Period of progression and of specific involvement. Enlarged lymph nodes in various regions, most regularly in the neck. According to some, mediastinal lymph nodes are involved even earlier. Frequently splenomegaly. The clinical manifestations are an expression of host resistance.
3. Stage generalization (Hodgkin's toxemia). Fever, night sweats, anemia. This is the period of decline and cachexia. The picture is one of host decline.

Naturally, there are great variations in the clinical course, possibly determined by the vague but none-the-less extremely important fact of host resistance.

II. The chronologic classification recognizes four varieties:

1. Acute disease: lasts from weeks to a few months. The course is highly septic, with general involvement, often high eosinophilia, and tendency to massive necrosis.
2. Subacute disease: lasts from a few months to two years.
3. The chronic: the usual form extends from two years to six years.
4. In the protracted form, the patients survive for more than six years.

III. Another classification is based on anatomic distribution and on the degree of generalization:

1. Mediastinal.
2. Abdominal (mainly involvement of retroperitoneal lymph nodes, spleen and liver. Often so-called Pel-Ebstein syndrome).
3. Splenomegalic (rare as pure form).
4. Osteoperiostic.
5. Gastrointestinal.
6. Cutaneous.

Gross Pathology

First involvement most frequently is in the neck, as a rule on one side. Lymph nodes are more often involved on the same side in two regions (e.g., cervical and axillary) than on both sides in one region (e.g., cervical on both sides.)

The spread and progression occur by successive exacerbations and remissions. Eventually there is spread to deeper nodes, viscera and bones. The frequency of involvement of lymph nodes decreases in the following order: cervical, axillary, mediastinal, retroperitoneal, inguinal and epitrochlear. Some believe that deep lymph nodes are the first ones involved, in groups or chains of from three to five. The consistency varies with size. Usually the larger are harder. They are freely moveable and discrete or matted together.

On section the normal architecture is absent. It is semitranslucent gray with opaque yellow-gray streaks and light yellow dots of necrosis. In nodes recently involved the sectioned surface is bulging; in older nodes there is retraction due to firm fibrous tissue.

The spleen is involved frequently, in 50 to 75 per cent of advanced cases. The liver is affected less frequently but again in proportion to the duration. The spleen may be primarily involved. The same applies to the liver, though much more rarely. Involvement of the gastrointestinal tract may be a part of the general disease or primary in the stomach, ileum or duodenum. Involvement of any organ or tissue of the body is possible. Confinement of the disease to the abdominal cavity is not infrequent. Intrathoracic involvement is common, particularly of the mediastinal lymph nodes. Massive involvement of mediastinal nodes is more frequent in early life. The lungs are affected in about one-third of the cases.

Bones are a late manifestation of chronic disease. Lesions have been found mainly in the vertebrae, skull, thorax and pelvis.

Involvement of bone marrow may be revealed by a puncture. The central nervous system lesions are rare and as a rule secondary to bone involvement. Pruritus is common, but demonstrable true Hodkin's disease of the skin is rare. Immunity of subcutaneous tissues and mucous membranes to the disease has been claimed.

Is there a primary site in the natural history of Hodgkin's disease? This is a natural question in view of the fact that lymphoid tissue is spread all over the body. The prevalent opinion is that

superficially located lymphoid tissue is the primary site rather than the deep, although the opposite is maintained by recognized authorities on the subject. Primary sites in isolated cases have been definitely established in spleen, liver, stomach, duodenum, ileum, lungs, thymus, bone, breast, marrow and skin.

Laboratory Findings

The blood shows progressive anemia in late stages, first normochromic and normocytic, later hypochromic and microcytic. Eventually refractory anemia may develop. An improvement in red blood picture following treatment is a good prognostic sign.

Leukocytosis with lymphopenia is frequently seen in progressive disease. The latter may reach extreme degrees. Occasionally leukopenia is present. It does not constitute a contraindication to radiation therapy and it may improve following radiation. A rise in the number of lymphocytes is also a good prognostic development.

Eosinophilia is present in from 15 to 20 per cent of cases. Its significance is not known. Monocytes are frequently increased and high numbers are favorable prognostically. Platelets may be normal, increased (especially early) or decreased. In the latter case they suggest damaged marrow.

Marrow findings are not diagnostic, except for the extremely rare finding of Sternberg-Reed cells.

Urinary findings depend on extrinsic or intrinsic involvement of the kidneys by the disease. Nocturia is common even in the young, especially during exacerbations.

Basal metabolic rate is elevated in generalized but not in localized disease. Following successful radiation therapy the rate returns to normal levels. Tuberculin tests are characteristically negative in patients with Hodgkin's disease, occasionally even in the presence of demonstrable tuberculous lesions.

Histopathology

The target tissue in Hodgkin's disease is the reticulum, the multipotential matrix of various mesodermal structures found all over the body but concentrated in large amounts especially in the lymphoid tissue. The reticulum is a syncytium, which means that it consists of a common protoplasmic mass with nuclei in it but without distinct cytoplasmic borders.

The earliest detectable change in Hodgkin's is proliferation of reticulum cells, with enlargement and swelling of the nuclei and a tendency towards separation of the cell from the syncytium. The characteristic landmarks of the lymph node section become blurred and eventually obliterated by the overgrowth of the reticulum cells with large blown up vesicular nuclei and distinct nucleoli. There is increased mitotic activity. Mononuclear, multinucleated and polymorphonuclear giant cells appear.

The characteristic Sternberg-Reed (S-R) giant cell is a multinucleated cell with two or more nuclei, but rarely with the large number seen in other types of giant cells. The nuclei may be polymorphous, lobated. The chromatin is abundant with areas of condensation, especially adjacent to the nuclear membrane. The nucleoli are sharply outlined, round or oval and metachromatic. They frequently stain red in the H-E sections. As a rule, there is only one nucleolus in each nucleus or nuclear segment. A pale area is frequently noticed around each nucleus. It is not sharply outlined but passes gradually into the surrounding granular cytoplasm of the rest of the cell. Unicellular S-R cells with the described nuclear characteristics are also seen. In some cells there is a symmetrical arangement of the nuclei, producing a so-called mirror image appearance. Giant cells with many peripherally located nuclei occur but are rare and not diagnostic.

A detailed description of the S-R cell is important because it is specific and essential for the diagnosis of Hodgkin's disease. The changes due to proliferation of the reticulum including giant cell formation are seen early in the disease. Plasma cells, eosinophilic and neutrophilic leukocytes, are also present in varying proportions and during different stages of the disease. Lymphocytes may be numerous early, but seem to be displaced by the proliferating reticulum cells. Reticulum fibers appear early and become progressively numerous in the natural course of the disease. Eventually fibrosis of varying intensity is present with decrease in cellular elements.

In the fully established lesion there is a polymorphous picture of all the varieties of cells listed in varying proportions. For reasons yet unknown, some of the cells may be predominate and other are few or absent. The same holds for the fibrosis. Furthermore, the findings may vary considerably in different lymph nodes of the same person simultaneously or at different times.

Focal necrosis is common and usually of the coagulation type. Ischemia due to vascular changes is the probable cause; the capsule is frequently invaded.

The connective tissue is thought to arise from reticulin fibers produced by reticulum cells and/or to be produced by fibroblasts, products of differentiation of reticulum cells.

The eosinophils are, as a rule, absent in the capsule, connective tissue, and germinal centers, as long as these are preserved. They are thought by some to come from the blood in response to the action of a chemostatic agent, but according to others they are produced locally by differentiation from reticulum cells. In support of the latter conception are mononuclear eosinophilic cells, and the fact that they are rarely seen within blood vessels. Charcot-Leyden crystals and Russell bodies may be present.

The described histologic characteristics of the fully developed lesion are the same regardless of the organ. Certain deviations have been described in the case of the skin, but the exact interpretation of the differences is still lacking.

In the course of time, various classifications based on histologic findings have been proposed.

Bersack's classification published in 1943 is based on a study of 225 cases of the disease. He recognizes three stages:

1. Paragranuloma: (1) Enlarged lymph nodes by prevalence of reticulum cells or frequent mitoses, or both: (a) typical, (b) atypical.

2. Hodgkin's lymphoma, with destruction of lymph node architecture, slight tendency to pleomorphism, with or without Sternberg-Reed cells, with lymphocytes present in normal or excessive numbers.

3. Hodgkin's granuloma, encountered in majority of cases, with typical pleomorphism, Sternberg-Reed cells and moderate fibrosis.

This description did not become as widely accepted as Jackson and Parker's, first published in 1937 and in greater detail in 1944. They recognized three main phases of the disease:

1. Paragranuloma: (1) Enlarged lymph nodes few and mainly in the neck, rubbery, not attached to surrounding tissues, less than 3 cm. in diameter, capsule intact, no necrosis, involvement of internal organs rare. (2) Histologic changes: architecture may be partly preserved. (3) Sternberg-Reed cells present, but showing no mitoses. (4) The predominant cell is the adult lymphocyte. (5) Plasma cells and eosinophils may be present.

This is essentially a disease of lymph node. It is the least malignant form.

2. Granuloma: (1) Lymph node involvement in isolated groups, but may be extensive. Retroperitoneal or para-aortic nodes recognized as the primary site in most cases, even though nodes of neck may be more impressive. (2) Gross findings: consistency hard, sectioned surface gray with focal necrosis and complete loss of normal landmarks. (3) Histologic appearance: obliteration of normal architecture, cellular pleomorphism with varying prominence of typical Sternberg-Reed cells, some of them with necrotic and degenerative changes, frequent mitoses, lymphocytes, plasma cells, neutrophilic and eosinophilic granulocytes represented in varying proportions. Increase in reticulum fibers, progressive fibrosis, and necrosis. Fatty changes in vacuolated reticulum cells and in giant cells of foreign body type.

Granuloma may involve any organ except the central nervous system and is frequently widespread.

3. Hodgkin's sarcoma: (1) Usual origin retroperitoneal with extension to abdominal organs. Tendency to massive necrosis. (2) Sternberg-Reed cells and other atypical giant cells much larger than normal lymphocytes (about three times). (3) Lymphocytes and reticulum cells present, but plasma cells and eosinophils rare.

This behaves like a true tumor, is invasive, and may involve also the central nervous system.

Transitional forms of the three types occur.

Objections to this and other classifications have been raised on the ground that lymph nodes with changes in all stages may be present in one and the same person at one time.

Incidence

How frequent is Hodgkin's disease?

The figures for the United States vary from 0.5 to 2.5 per 100,000 living persons.

The higher figures are probably more correct, because it was shown that the morbidity and mortality statistics vary depending on the reporting ability of different states. Data compiled from autopsy statistics are probably more reliable. They range from 0.16 per cent to 0.33 per cent of au-

topsies in this country and abroad compiled from a total of over 90,000 autopsies.

Claims that the incidence of the disease has increased recently have not been confirmed. Its world wide distribution has been established. It is rare during puberty, most frequent in males between 45 to 49, in females between 25 to 29. Cases have been observed in the newborn, showing that it may be congenital. The disease was also reported in the ninth and tenth decades. Differences in the age distribution are claimed to be determined by the number of population in the particular age groups. The higher incidence in males seems definitely established, the proportion in adults is 2:1 and in children 4:1. The preponderance in males holds for all lymphomas (leukemia and lymphosarcoma).

Diagnosis

Early diagnosis means early biopsy, because biopsy is the only means of a correct diagnosis of Hodgkin's. Everything else is an approximation.

Following is a list of diagnosis established by biopsy in cases in which a clinical pre-biopsy diagnosis of Hodgkin's disease was made; metastases from a carcinoma of bronchus, pancreas, prostate, stomach (in a thirty-year-old woman), testicle, thyroid, melanoma, neuroblastoma, to quote but a few examples.

The preceding statement does not imply that a biopsy will always reveal the correct diagnosis. The problem of the early diagnosis of Hodgkin's is complicated by the fact that in one lymph node there may be early histopathologic changes which are not specific, whereas another lymph node may present specific and diagnostic changes.

There are cases on record of patients who consulted a physician with an enlarged lymph node and who were told to leave it alone, only to be found later, after varying intervals, to have Hodgkin's disease. For that reason, it is wise to consider any enlarged lymph node lasting over three weeks as requiring thorough investigation. In some areas, for example in the upper cervical region, careful examination of the drainage territory may reveal the presence of a primary infectious focus. Blood examination, x-ray study of the chest, et cetera, may throw additional light on the nature of the lymph node enlargement. However, biopsy should not be delayed whenever complete clarification of the condition did not come from the preliminary studies.

When lymph nodes are present in several regions, it is well to keep in mind that, as a rule, lower cervical and axillary are more satisfactory for study than upper cervical and inguinal, because less likely to show complicating inflammatory changes. Cosmetic considerations, important as they are, should not be deciding. It is better to remove the lymph node with some of the adjacent fat tissue than to dissect it absolutely free of it. Less trauma to the specimen will render it more satisfactory for a diagnostic study. A few lymph nodes are always preferable to a single one. The histopathologic diagnosis of lymph node lesions is difficult, and it is not made easier if the surgeon cuts the specimens. Vary rarely will he depend on his own diagnosis made with the naked eye on a dissected specimen, and not infrequently will the surgeon's curiosity damage the specimen sufficiently to make the pathologist's difficult task so much harder.

It may happen that an unequivocal diagnosis cannot be made by the pathologist by examining one lymph node, but that another lymph node removed from the same or from another area will be diagnostic. Removal of a lymph node is now a simple and safe procedure. I have seen months wasted because the recommendation for another biopsy was not heeded.

Prognosis

The treatment of Hodgkin's disease should be approached at present with greater confidence and hope for amelioration of symptoms and prolongation of life than many physicians seem to have. Even in the presence of generalized disease, spectacular improvement is possible. Ten-year and longer survivals have been reported in cases diagnosed originally as Hodgkin's sarcoma. Just as the diagnosis of paragranuloma does not necessarily mean assurance of a better prognosis, so does the finding of what seems to be a particularly malignant variant indicate an absolutely bad prognosis.

The fundamental premise is that Hodgkin's disease is unicentric in origin, that it begins in one area, one lymph node or in one group of lymph nodes, and that it spreads to other regions after varying time intervals and in response to various influences and circumstances. This premise is the basis for the conception of radical early therapy, be it surgical, roentgen ray or preferably a combination of both.

Prognosis in the individual case is extremely hazardous. Patients with disseminated lesions may respond to therapy and remain well for years or decades. On the other hand, patients with local lesions may die in a matter of weeks.

*Prognostically Favorable Factors**

1. Localization in one area.
2. Marked enlargement of external nodes before treatment.
3. Normal WBC.
4. Lymphocytosis in the blood and in the lymph nodes.
5. Monocytosis in the blood.
6. Normal RBC and Hb.
7. Females with Hodgkin's disease have a better prognosis than males.
8. Weight gain after x-ray.
9. "Patient showing osteoblastic metastases are in better condition and live longer" (Jenkinson, 1932).
10. Rural rather than urban environments are conducive to a good prognosis.
11. Normal or nearly normal sedimentation rate.

*Prognostically Unfavorable Factors**

1. Septic and Pel-Ebstein fever.
2. Initial temperature elevation due to the disease.
3. Marked pruritus.
4. Splenomegaly.
5. The presenting symptom other than adenopathy.
6. Cases in which symptoms of an acute infection immediately precede the onset of the disease are often rapidly fatal.
7. Parenchymal pulmonary involvement.
8. Patients with predominant localization in the abdominal cavity.
9. The development of gastro-intestinal symptoms.
10. Progressive anemia.
11. Both extremes of age.
12. A rapid sedimentation rate early in the disease.
13. Pronounced weight loss.
14. Marked lymphopenia.

According to Wallhauser's analysis of a large material prior to 1932, the average duration of life following the onset of the disease is slightly more than twenty-four months.

What Is Hodgkin's Disease?

*Nature and Etiology***

1. Hodgkin's disease is a neoplasm
   (a) Of myeloid origin
      i. Reticulum cell
      ii. Megakaryocyte
   (b) Of lymphoid origin
      i. Reticulum cell
      ii. Lymphocyte
   (c) The unitarian hypothesis of lymphomas (Custer)
2. Hodgkin's disease is an inflammation
   (a) Of infectious origin
   (b) Of "toxic" origin
   (c) Of allergic origin
3. Hodgkin's disease is a metabolic abnormality
   (a) Due to hormonal imbalance
   (b) Due to other metabolic imbalance
   (c) Due to autonomic nervous system imbalance
   (d) Due to allergy

*Modified from Hoster, H. A.; Dratman, M. B.; Craver, L. F., and Rolnick, H. A.: Hodgkin's Disease, 1832-1947. P. 17, 1948.

**Ibid. P. 38, 1948.

Therapy—General

As stated at the onset, I am not competent to discuss therapy except as I have had an opportunity to see its effects and to follow the currents in the literature during the last thirty years.

If this is sufficient justification, my opinion at the present time is that courageous and intensive therapy as soon as diagnosis is made and constant and untiring lookout with roentgen-rays for new lesions and their treatment offer the best possible promise of prolongation of useful and enjoyable life.

There are those who advise treating Hodgkin's disease symptomatically; they recommend withholding treatment until clinical findings make it necessary, and then to give only as little treatment as is needed to produce palliation. This approach abandons whatever chance the patient might have for a cure, assuming that a cure is possible.

The opposite point of view is taken by those advocating radical surgical and/or radiotherapeutic attack as soon as the diagnosis was made. This point of view is predicated on the conviction that Hodgkin's disease is curable, or at least that such approach may be followed by results less likely to occur if a more conservative attitude is followed.

How do these diametrically different points of view stand up in the light of available data?

SURVIVAL AFTER COMBINED EARLY SURGICAL AND RADIATION THERAPY

	Total Surviving		Survival
	No.	No.	Years
Jackson & Parker	5	2	25,* 35**
Hellwig	30	24	5 to 20
Slaughter & Craver	5	5	5 to 11
Baker & Mann	2	2	Cure
Craver	250	22	10 to 17.7
		6†	more than 15

Prepared from data in Craver, Lloyd F.: Value of early diagnosis, 1952.

*Died three years later of a recurrence.

**Well at time of report.

†Five of them without treatment for from 4.8 to 14.4 years.

(Continued on Page 451)

Carcinoma of the Ovary

Diagnosis and Treatment

By Frederick H. Falls, M.D.
Oak Park, Illinois

THE diagnosis and management of ovarian malignant tumors is difficult primarily because of the insidiousness of their development and the prompt application of radical measures for their eradication before the tumor cells have had an opportunity to metastasize.

An important factor in delaying the recognition of these tumors is lack of discomfort and pain on the one hand and evidence of change in the physiological function of the ovary on the other.

To detect their presence, therefore, at an early stage in their development, routine pelvic examinations must be made at regular intervals, preferably every six months, with the express purpose of detecting a change in size of one or both ovaries. When such alteration is found, the patient must be kept under continuous observation with monthly examinations to determine the clinical behavior of such enlargements and, if progressive, immediate investigation by various diagnostic procedures such as culdoscopy, aspiration of cul-de-sac and Papanicolaou smears from the centrifuged fluid made. Exploratory laparotomy with frozen section biopsy may be advisable.

As soon as the diagnosis is made, radical removal of the involved ovary, the uterus and the opposite ovary is indicated because of the possibility of early metastasis to these organs. By the same token careful exploration of the regional lymphatics is in order to aid in the prognosis and in directing the measures best adapted to postoperative treatment.

When an ovarian malignancy has advanced beyond the early stages of its growth, pressure symptoms are usually complained of. This may be a dull pain on the involved side or dysfunction of the bowel or bladder due to compression. Occasionally a twist of the pedicle of such a tumor may occur, giving rise to acute symptoms requiring emergency surgery, at which time the malignant nature of the ovarian pathology is detected and panhysterectomy performed.

The most commonly encountered malignant ovarian tumor is the papillary proliferating cystadenoma. This is often not suspected until it has enlarged sufficiently to produce abdominal distention and may be easily felt on palpating the lower abdomen. The presence of free fluid in the peritoneal cavity in association with these tumors is ominous, especially if bloody.

Following removal of these tumors, x-ray treatments and, in some cases with rapidly recurrent ascites, colloidal gold have been valuable.

HODGKIN'S DISEASE

(Continued from Page 450)

Therapy—Surgical

Surgical removal of lymph nodes, the site of localized Hodgkin's disease, followed by roentgen radiation, has been tried by many with generally encouraging results. Survivals of from seven to thirty-four years following such treatment have been reported. The same applies to localization of the disease in various portions of the gastrointestinal tract. There are those who have expressed differing opinions, but on the whole the recorded observations and the relative innocuousness of surgical removal favor this approach. Much can be gained and little lost.

Therapy—Roentgen Radiation

The prevalent opinion has probably been expressed best by Hoster: "In our present state of knowledge there seems to be little question that persistent, early, and thorough x-ray therapy is indicated when the diagnosis of Hodgkin's disease is made."

There are a few contraindications: (1) acute forms of Hodgkin's disease, (2) active tuberculosis in regions where roentgen therapy is to be applied, (3) renal insufficiency, (4) previous x-ray damage especially of skin, or (5) toxic depression of bone marrow function.

Presented at the annual session of the Michigan State Medical Society, Detroit, September 29 to October 1, 1954.

Statistical Study of Cases of Carcinoma of the Lung at Mount Carmel Mercy Hospital, Detroit, Michigan

Louis J. Gariepy, M.D.
Detroit, Michigan

OUR ORIGINAL work was to formulate a statistical survey of pulmonary complications in the heavy smoking patient, following general anesthesia in major surgery. The question of smoking on the part of the surgical patient has always been of prime importance to the writer. The post-operative complications, which frequently develop in heavy smokers, are troublesome and distressing, and consist of an aggravating cough caused by the collection of mucus during sleep, and the inability of the patient to raise the phlegm, which is particularly viscid throughout the entire bronchial tree. Efforts to expectorate this phlegm result in severe pain, and rather than incur this discomfort, the patient refrains from coughing. This non-productive cough frequently causes severe complications which are distressing to the surgeon, as well as to the patient. L. H. Morris, writing in the *Modern Practice of Anesthesia,* brings out this point quite suitably in speaking of his own extensive surgical experience.

This statistical study of carcinoma of the lung involving cases at Mount Carmel Mercy Hospital from its beginning in 1939 until April 1, 1954, was a concomitant problem. The policy to have a roentgen film of the chest of every pre-operative patient has enabled us to detect malignancy of the lung in a number of cases.

Much has been written and said regarding the effects of nicotine upon the patient, and the relation of smoking to carcinoma of the lung. The Hammond and Horn studies on "The Relationship Between Human Smoking Habits and Death Rates" was a tremendous contribution to this subject. In his report, the Minister of Health in England was cognizant that cigarette smoking plays some part in the increasing number of malignant pulmonary new growths.

Our method of study included a complete review of the patients' charts, followed by mailing to each of the 287 patients (or the nearest relative) with proven carcinoma of the lung at Mount Carmel Mercy Hospital, a questionnaire, together with the following letter:

The Record Room of Mount Carmel Mercy Hospital is now making a survey on all cases of lung pathology which have been treated in this hospital since the year 1939.

We are confident that you would be anxious to help others in their recovery from a similar condition. However, in order to accomplish the best results in this survey, it is necessary that we obtain pertinent information regarding previous cases of this nature.

The above named patient was hospitalized in (year). We would greatly appreciate your assistance in filling out the enclosed questionnaire. Kindly answer the questions to the best of your ability, sign the same, and return it in the enclosed stamped, self-addressed envelope as soon as possible.

Thank you kindly for co-operating in this study.

Sincerely yours,
MOUNT CARMEL MERCY HOSPITAL,
Director of Medical Records

The data obtained from the returned questionnaires are presented in twenty concise, systematic charts without embellishment of speculation and interpretation. Only simple facts are incorporated in this survey in an effort to secure a significant scientific perspective on the smoking problem in relation to carcinoma of the lung.

CARCINOMA OF THE LUNG

MOUNT CARMEL MERCY HOSPITAL OF DETROIT HAS BEEN IN OPERATION SINCE 1939. DURING THE FIFTEEN YEARS FROM 1939 TO 1954, 287 CASES OF LUNG CANCER HAVE BEEN TREATED. QUESTIONNAIRES WERE SENT TO EACH OF THESE PATIENTS. THE FOLLOWING REPORT IS BASED ON THE REPLIES RECEIVED.

OF THESE 287 CASES:

• • •

CARCINOMA OF THE LUNG

PERCENTAGE OF REPLIES TO QUESTIONNAIRE:

Read at a meeting of the Staff of Mount Carmel Mercy Hospital, Wednesday, September 22, 1954.

CARCINOMA OF THE LUNG

SMOKERS

• • •

CARCINOMA OF THE LUNG

PRIMARY CANCER OF THE LUNG AMONG SMOKERS:

• • •

CARCINOMA OF THE LUNG

AVERAGE AGE AT DATE OF FIRST ADMISSION TO THE HOSPITAL.

KNOWN FAMILY HISTORY OF CANCER

• • •

CARCINOMA OF THE LUNG

TYPES OF SMOKING MALES

• • •

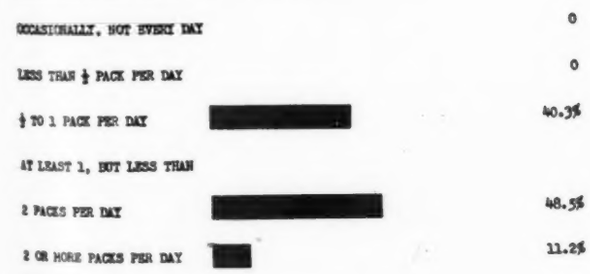
CARCINOMA OF THE LUNG

AVERAGE YEARS OF SMOKING:

• • •

CARCINOMA OF THE LUNG

CIGARETTES SMOKED PER DAY BY MALE SMOKERS:



CARCINOMA OF THE LUNG

AVERAGE YEARS OF CIGARETTE SMOKING:

• • •

CARCINOMA OF THE LUNG

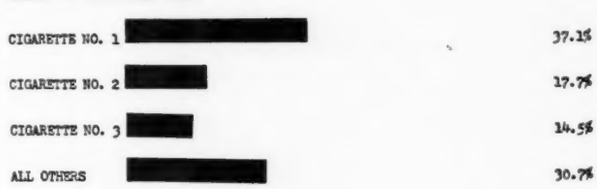
"HAS THE PATIENT STOPPED SMOKING SINCE THE ONSET OF HIS ILLNESS?"

"IF THE PATIENT IS STILL SMOKING, WHAT TYPE IS USED?"

• • •

CARCINOMA OF THE LUNG

BRANDS OF CIGARETTES USED:



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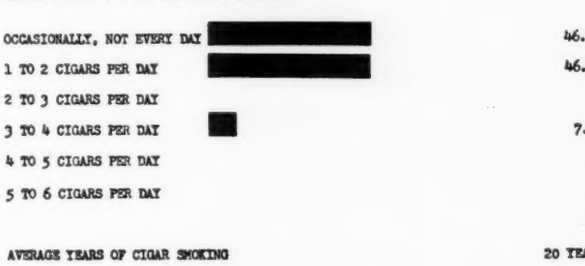
CARCINOMA OF THE LUNG

CIGARS SMOKED PER DAY BY MALE SMOKERS:

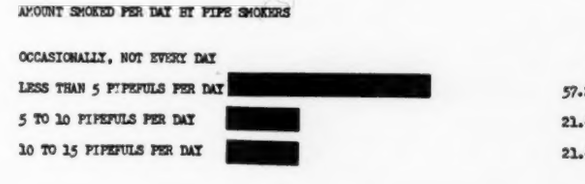


AVERAGE YEARS OF CIGAR SMOKING 20 YEARS

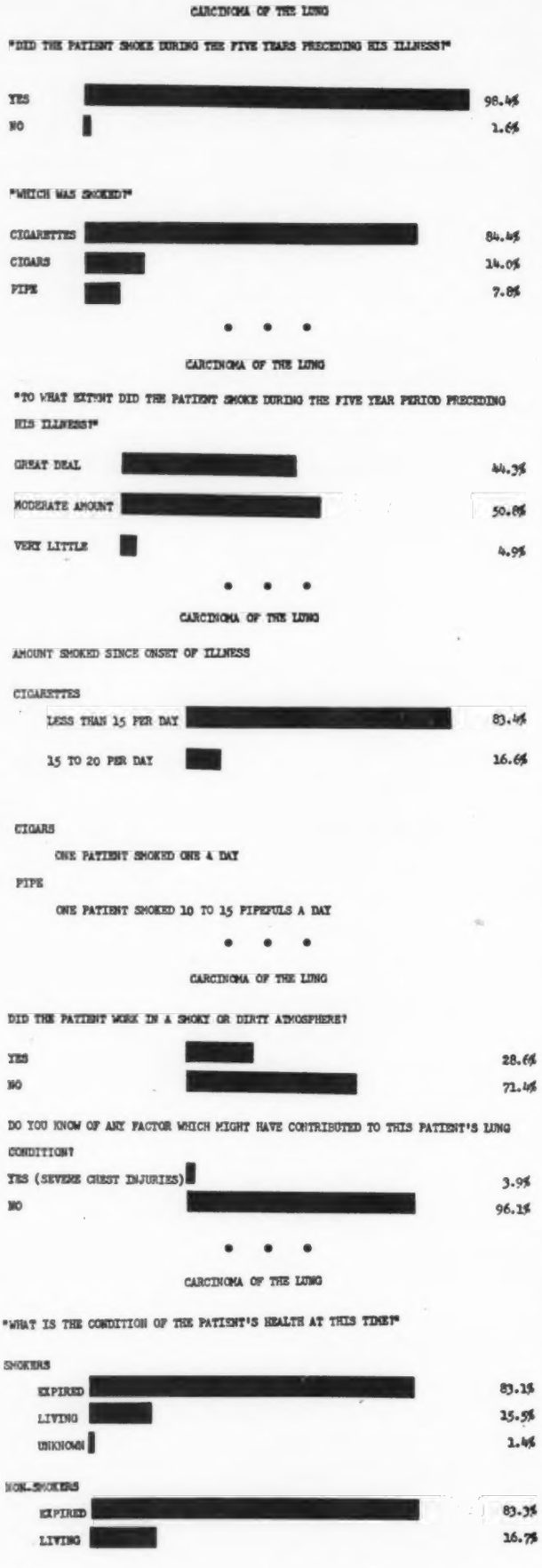
• • •

CARCINOMA OF THE LUNG

AMOUNT SMOKED PER DAY BY PIPE SMOKERS



AVERAGE YEARS OF PIPE SMOKING 28 YEARS


CARCINOMA OF THE LUNG
"DID THE PATIENT SMOKE DURING THE FIVE YEARS PRECEDING HIS ILLNESS?"
YES 98.4%
NO 1.6%
"WHICH WAS SMOKED?"
CIGARETTES 84.4%
CIGARS 14.0%
PIPE 7.8%
CARCINOMA OF THE LUNG
"TO WHAT EXTENT DID THE PATIENT SMOKE DURING THE FIVE YEAR PERIOD PRECEDING HIS ILLNESS?"
GREAT DEAL 44.3%
MODERATE AMOUNT 50.8%
VERY LITTLE 4.9%
CARCINOMA OF THE LUNG
AMOUNT SMOKED SINCE ONSET OF ILLNESS
CIGARETTES
LESS THAN 15 PER DAY 83.4%
15 TO 20 PER DAY 16.6%
CIGARS
ONE PATIENT SMOKED ONE A DAY
PIPE
ONE PATIENT SMOKED 10 TO 15 PIPEFULS A DAY
CARCINOMA OF THE LUNG
DID THE PATIENT WORK IN A SMOKY OR DIRTY ATMOSPHERE?
YES 28.6%
NO 71.4%
DO YOU KNOW OF ANY FACTOR WHICH MIGHT HAVE CONTRIBUTED TO THIS PATIENT'S LUNG CONDITION?
YES (SEVERE CHEST INJURIES) 3.9%
NO 96.1%
CARCINOMA OF THE LUNG
"WHAT IS THE CONDITION OF THE PATIENT'S HEALTH AT THIS TIME?"
SMOKERS
EXPIRED 83.1%
LIVING 15.5%
UNKNOWN 1.4%
NON-SMOKERS
EXPIRED 83.3%
LIVING 16.7%

The following is a summation of the 287 cases of lung cancer treated at Mount Carmel Mercy Hospital, Detroit, Michigan:

	Male	*Female*	*Total*	
Patients	212	75	287	
Family History of Cancer	12	4	16	(6%)
Primary Cancer of Lungs	195	34	229	(80%)
Primary Other than Lungs	17	41	58	(20%)
Average Age of Patients	58.5	55.7	57.8	
Average Age of Patients with Primary Cancer of the Lung	58.8	60.1	59.0	
Percentage, Male to Female, with Primary Cancer of the Lung	85%	15%		

Operative Procedures

	Male	*Female*	*Total*	
Bronchoscopy	114	19	133	(46%)
Biopsy	19	5	24	(8%)
Pneumonectomy	34	6	40	(11%)
Lobectomy	8	2	10	(3%)
Esophagoscopy	1	1	2	(.7%)
Laryngoscopy	1	0	1	(.3%)
Rib Resection	2	1	3	(1%)
Thoracotomy	27	6	33	(11%)

Summary

From a superficial survey of our statistical data, smoking may be a significant factor in the etiology of primary carcinoma of the lung. However, conclusive proof of this hypothesis has not been given.

This study has been presented with the sole idea that if *every major hospital in America* would review its records on cases of carcinoma of the lung, with the thought in mind as to whether or not smoking or any other factor might be suspected, *perhaps* the end result of this voluminous research, when considered in its entirety, would tend to steady the accusing finger when it points to cigarette smoking, or any other irritant, as a causative factor.

Innumerable substances have been discussed in the literature as possible carcinogenic agents. With the single exception of certain radioactive substances, this subject is most perplexing and controversial. Some authors believe cigarette smoking may be a significant factor, and at the present time, a tremendous intensive research program is planned to investigate the various components in inhaled smoke, such as nicotine, phenolic bodies, ammonia, pyridine bases, arsenic, certain hygroscopic agents, and so forth. Obviously, the American Cancer Society and the Tobacco Industry Research Committee are seriously interested in these investigations.

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Carcinoma of the Breast in Pregnancy and Lactation

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THE obstetrician must assume the responsibility of diagnosing malignant disease in association with pregnancy and see that adequate treatment is started at once. He has a long and intimate contact with the patient.

Carcinoma of the breast occurring in pregnancy has been considered to be such a disastrous disease that Haagensen and Stout[6] in 1943 stated that "cancer of the breast developing during pregnancy or lactation is so malignant that surgery cannot cure it often enough to justify this method of treatment." In 1951, however, they reversed their position and no longer considered the pregnancy itself in their criteria for operability.[5] The prognosis in malignancy still is dependent primarily upon early diagnosis and treatment. We propose to show by illustrative cases that, in spite of possible deleterious effects of pregnancy, much can be offered these patients, that cure is not impossible, and prolonged palliation can be afforded.

Case Reports

Case 1.—A thirty-five-year-old patient, who was a gravida IV, para III, first noticed a lump in her left breast two weeks prior to admission to Woman's Hospital in 1946. Clinically this was thought to be a fibroadenoma, but a breast biopsy and frozen section revealed a grade III medullary carcinoma. A radical mastectomy was performed and no axillary metastasis was found. The patient was four months pregnant at the time of operation. She made an uneventful postoperative recovery, carried her pregnancy to term, and delivered a normal living infant without difficulty. There has been no evidence of recurrence of the carcinoma to the present (nine years).

Case 2.—The patient was a twenty-nine-year-old gravida II, para I, who was four and one-half months pregnant when she was admitted to the hospital because of malaise, weight loss and severe, constant back pain. X-rays of the spine showed numerous osteolytic changes. Further x-rays showed these osteolytic lesions to involve the pelvis, ribs, skull and humerus. After repeated careful examinations, a small tumor was found in the right breast which biopsy proved to be the primary carcinoma. On the day following the biopsy spontaneous abortion occurred. Because of the extent of the metastases, x-ray therapy was thought inadvisable, so testosterone propionate, 100 mg. every other day, was begun. There was slight symptomatic improvement, but the bone metastasis became more extensive. It was decided that further palliation was possible only by complete eradication of all sources of estrogen, namely, bilateral oöphorectomy and adrenalectomy. Adrenal cortical substitution therapy was instituted and because of the extreme debility of the patient these procedures were carried out in three stages, approximately three weeks apart. Nine days following the third operation the patient was able to sit up for the first time in over three monhs. She continued to improve and was discharged walking three weeks later. She remained ambulatory and comfortable for about two years following these procedures. At intervals she would stop taking cortisone and would require hospitalization to correct the adrenal cortical insufficiency. The eventual cause of death was pulmonary metastasis.

Case 3.—A thirty-four-year-old woman, who was a gravia III, para II, was four months pregnant when she was admitted to the hospital in September, 1949, with a history of a tumor of the left breast for one month. On examination a 7 cm. mass was palpable in the breast and, in addition, there was a hard 2 cm. mass in the left axilla. Frozen section diagnosis of the biopsy revealed a malignancy, and radical mastectomy was performed. Numerous axillary metastases were found. Three weeks later a subtotal hysterectomy and bilateral salpingo-oöphorectomy were done as a palliative procedure, This was carried out at the request of the patient and her husband with the understanding that it was only a palliative procedure. X-ray therapy was given and at the time of this writing, four and one-half years later, there is no evidence of recurrence.

Case 4.—A thirty-seven-year-old woman, gravida V, para III, was admitted to the hospital in 1933, when she was 39 weeks pregnant and in labor. On routine physical examination a hard, 4 cm. mass was palpable in one breast. The patient stated that she had first noticed the tumor one month previously. She was delivered by low forceps of a normal living infant. Immediately following delivery an excision biopsy of the breast tumor was performed and microscopic examination revealed carcinoma. On her fourth postpartum day a radical mastectomy was done, and several large axillary lymph nodes were found to contain carcinoma. She made an uneventful postoperative recovery and was given deep x-ray therapy to the left thorax, axilla, cervical, infra- and supraclavicular areas. The patient remained well and there is no evidence of recurrence to the present (twenty-two years).

Case 5.—A twenty-one-year-old woman, gravida I, para O, was admitted to the hospital via ambulance when she was four and one-half months pregnant. One month prior to admission she had noticed a diffuse, reddened, tender swelling of the left breast. She was treated before admission with external applications, sulfa and penicillin, without improvement. The right breast soon became in-

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involve ment and distant metastasis. X-ray therapy to weak, dyspneic and confined to bed. On admission to the hospital a diagnosis of bilateral inflammatory carcinoma was confirmed by biopsy. There was obvious lung involvement and distant metastasis. X-ray therapy to both breasts, a total dosage of 6,160 roentgens, and testosterone propionate, 100 mg. daily, were given. The breasts regressed in size and the patient symptomatically improved. She was discharged from the hospital after a month, active, comfortable and able to conduct her household duties. She continued to receive 100 mg. of testosterone twice weekly. When she was last admitted to the hospital, in her twenty-ninth week of gestation, she showed evidence of generalized metastasis. In addition, she had developed a blood dyscrasia and, in spite of daily blood transfusions, it was impossible to raise her hemoglobin above eight grams. At thirty-one weeks gestation, she was delivered by cesarian section of a normal living infant. Bilateral oöphorectomy was done at this time and the ovaries were found to contain metastases. In spite of the castration and continued testosterone therapy, she failed rapidly and expired on the fifth postoperative day.

Case 6.—A thirty-nine-year-old woman, gravida II, para I, was delivered in March, 1954. She had breast-fed her baby regularly. When she was three weeks postpartum she noted a small mass in her left breast. The following day, frozen section of the excised 2 cm. mass revealed a grade III, medullary carcinoma, and radical mastectomy was performed. No axillary metastasis was found. The postoperative course was uneventful and no further therapy, i.e., x-ray or castration, was given. There is no evidence of recurrence to the present (eleven months later).

Comments

The common conditions of the breast requiring surgical intervention during pregnancy and lactation are, in order of frequency, acute mastitis, carcinoma, fibroadenoma, chronic infectious mastitis, tuberculosis and galactocele.[3]

Smith,[10] in a ten-year survey of malignancies occurring during pregnancy seen at Memorial Hospital in New York, found that about half of these were of the breast. The next most frequent site was the cervix. From Harrington's[8] survey of over 4,000 cases of carcinoma of the breast, ninety-two (2 per cent) occurred during pregnancy or lactation. Eighty-four per cent of those pregnant or lactating had axillary metastasis, compared with 63 per cent for the entire series. Eighty-one per cent were found to be grade three or four, indicating a higher degree of anaplasia at this time.

Geschickter[3] thought the deleterious effects of pregnancy to be due to the early age of the patient, the increased vascularity of the breast, and the intensity of endocrine influences resulting in an increased rate of growth and spread of the malignancy. Haagensen,[6] however, in reviewing 1,000 cases of carcinoma of the breast, found survival rates varied very little with the age of the patient. Another important factor thought to be responsible for the poorer prognosis is the difficulty in detection of a mass in the presence of the increased fullness and size of the breasts at this time.[1] Geschickter[3] found in most cases the duration of the cancer exceeded the duration of the pregnancy. The duration of symptoms averaged six months in the tumors observed in the first half of gestation and eight and one-half months in the second half. The size of the growth was between 4 and 6 cm. in diameter at the time of the first examination. It is clear, then, that thorough examination of the breasts as part of the prenatal care of every patient and prompt biopsy of every breast tumor found during pregnancy should be done.

The presence of axillary metastasis is the most important factor in determining prognosis. Harrington[8] found the five-year survival rate in those pregnant to be 61 per cent, in the absence of axillary metastasis. If axillary metastasis were present, the five-year survival rate fell to 5 per cent, compared to 72 per cent and 28 per cent, respectively, in those not pregnant. Geschickter[3] thinks that, if inflammatory carcinoma is excluded, the survival rates of breast malignancies occurring during pregnancy are comparable to those in the nonpregnant and nonlactating. Cases 1, 3, 4 and 6 bear out this impression.

The question of therapeutic abortion is invariably raised and, as yet, there is no unanimity of opinion. Geschickter[3] and Cheek[1] thought that abortion should be done, particularly if the patient is in the first half of pregnancy. White,[12] Harvey[9] and Hachman and Schreiber[7] thought that abortion is not indicated. Hachman and Schreiber[7] state that "whether aborted or delivered at term the evolution of the disease is not changed in early cases properly treated. No benefit is observed from therapeutic abortion. Stress, therefore, should be laid on the extension of the disease and prompt treatment, the indications being similar to those of noncomplicated cases." Smith[10] thought the prognosis was better in those not aborted. We think that if axillary metastasis has not occurred, nothing is to be gained by interruption of the pregnancy. In the presence of metastasis, abortion can only be considered as a palliative procedure in association with surgical castration.

Inflammatory carcinoma of the breast occurs most frequently during pregnancy and lactation. It is stated that 5 to 7 per cent of breast malignancies occurring at this time are of the inflammatory type. It is well to repeat Da Costa's[2] rule that in any case of supposed mastitis persisting for more than two weeks, biopsy is indicated to rule out inflammatory carcinoma. Since curative procedures are not yet available for this type of malignancy, palliation with testosterone and x-ray should be employed. This is well seen in Case 5, in which palliation with these two agents enabled the patient to carry her pregnancy to viability. It should be noted also that this therapy produced no deleterious effect on the offspring.

Definitive radical surgery, including thorough dissection of the axilla, should be undertaken as soon as possible if cure is to be anticipated. Simple mastectomy is indicated solely for palliation in the clinically inoperable and this therapy should be individualized. In general, the following methods are available: x-ray, androgens, castration, interruption of the pregnancy and, in selected cases, bilateral adrenalectomy. Triethylene melamine, a new chemotherapeutic agent, has been used with some success in palliative treatment. X-ray therapy should be used first. It has been shown that there is no detrimental effect to the fetus from this treatment. Androgen is indicated for relief of pain due to bone metastasis only after irradiation will no longer control it. As mentioned earlier, interruption of the pregnancy should be done only at the request of the patient and her husband, in an effort to prolong her life a few more months. Surgical castration soon after radical mastectomy will benefit one third of the patients who have evidence of metastasis.[11] Bilateral adrenalectomy is still considered to be an experimental procedure but in carefully selected cases has proved quite beneficial, as seen in Case 2.

In the absence of axillary metastasis, if the patient shows no evidence of recurrence of the malignancy in three to five years, there is no reason why another pregnancy should not be undertaken. Haagensen[4] thinks that as follow-up care improves, the incidence of bilateral breast carcinoma will reach 10 per cent. This does not imply that pregnancy has any influence on the development of breast carcinoma, but rather that an already existing malignancy will have an accelerated growth during pregnancy and lactation.

Summary

Six cases illustrating the common situations encountered in carcinoma of the breast occurring in pregnancy and lactation have been reviewed. We would emphasize the following points:

1. Pregnancy alone does not make the malignancy incurable. Excluding inflammatory carcinoma, survival rates are comparable to those in the nonpregnant and nonlactating.

2. Early detection and prompt treatment are paramount if cure is to be effected. Do not dismiss any breast swelling as inflammatory unless it responds to treatment quickly.

3. The young age of these patients and the degree of anaplasia are not deterring factors in prognosis, but the presence of axillary metastasis decreases the five-year survival rate from 61 to 65 per cent.

4. Because of the increased size and engorgement of the breast during pregnancy and lactation, palpation of early malignancies is more difficult. We would urge every physician practicing obstetrics to carry out frequent breast examinations and to instruct his patients in the importance and methods of self examination of the breasts.

5. Inflammatory carcinoma of the breast is incurable, but palliation can now keep these patients comfortable for a period of time. Since interruption of pregnancy does not alter the prognosis, every effort should be made to carry the patient along until the baby is viable.

6. Interruption of pregnancy is not indicated in the absence of axillary metastasis. In the presence of axillary metasis, interruption of the pregnancy can only be considered as a palliative procedure in association with castration.

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Cancer of the Breast in Kalamazoo

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THIS study was prompted by a personal inquisitiveness as to whether breast cancer treatment in a small city, 100 miles from the nearest teaching center, compared at all favorably with the results from the medical centers. The author on several occasions had been involved in discussions as to whether the average general practitioner doing the average simple mastectomy and following this with postoperative irradiation was performing work that compared favorably with that done by surgeons who did a radical mastectomy and followed this with a course of irradiation. The radiologist not infrequently had been looked upon as the one who caused the swollen arm and the one who occasionally produced significant damage to the underlying lung. Therefore, this study was done locally to check our own cases and also to attempt to answer some of the above questions.

This survey extends from 1937 to 1952 and is limited to proven cases of breast cancer given a "significant" amount of irradiation at our office*; 417 cases were eligible.

Six of this group were men, five having been seen within the past five years. Four had positive nodes in the axilla at the time of surgery. One was negative and there were no nodes in the specimen in the last case. Three are dead with an average survival of one and one-half years; two others are well at two and one-half and three years. The sixth case developed osteoblastic metastases at the four-year mark. One of these patients was "inoperable"; however, he was operated upon with an associated orchiectomy and this patient survived one year following the irradiation (carcinoma en cuirasse).

The median age of the 411 women was fifty-four years. (See tabulation.)

Radiation Technique

There was a slight variation in our factors over this period, but in general we delivered 1,800 to 2,000 r in air to each of four fields. The anterior thorax field averaged 11 by 19 cm. with the central ray directed toward the axilla with the mesial edge beyond the midline to the contralateral hemithorax. The anterior and posterior axillary and the supraclavicular fields were 10 by 15 cm. each. In earlier years the average patient received 130 KV and in later years 200 KV irradiation with a half value layer of 1.0 mm. copper. The only significant difference that one can gain from reviewing these cases is that with the higher voltage the incidence of radiation fibrosis was slightly higher but one could be more confident of a better tumor dose. If the patient had a simple or a modified radical mastectomy, our goal was 2,200 r per field, but if a radical mastectomy had been performed, the dose was about 1,800 r as measured in air. In this latter group with tight skin over the anterior thorax and axilla we have experienced definitely delayed healing of the irradiation reaction and, therefore, we have not irradiated as vigorously.

Type of Surgery

The cases were divided into three major classifications the first being that of a simple mastectomy. Mere excision of the local tumor was included with the simple mastectomies. The second group represents the modified radical mastectomy where the surgery was definitely more adequate and there had been some dissection of the axilla and partial excision of the pectoralis major or minor. The radical mastectomies were the group where the pectoralis major and minor had been resected and there had been, in the opinion of the radiologist and the pathologist, adequate dissection of the axilla. In order to establish survival figures, the author has limited the cases to those in which there is a known follow-up of at least five years or where there has been a death due to the known cancer of the breast and/or its complications. In all, 211 cases were eligible for analysis. The evaluation of the stage of the disease at the time of surgery would have been a valuable

Age	No. of Cases
20-30	2
31-40	37
41-50	101
51-60	117
61-70	97
71-80	48
81-90	6
Unknown	3

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fact in this analysis, but with the surgery having been done by ninety-nine doctors and with such a great variance in their training, the written preoperative description was in many cases too vague for critical classification.

There were sixty-one cases of simple mastectomy with an average age of 51.1 years. The median survival was 5.2 years. There were fifty-two cases with a modified radical mastectomy with an average age of 54.6 years. The median survival was 4.9 years. Ninety-eight patients had radical mastectomies with an average age of 50.0 years and had a median survival of 4.85 years.

There were thirty-seven cases who had negative axillary nodes microscopically at the time of surgery, and twenty-eight of this group have survived five years, making a 76 per cent five-year survival. One hundred and thirty-six cases had positive axillary nodes at the time of surgery, and fifty-four have survived five or more years with a percentage of 40.

Swollen Arm

One hundred and nine of the 417 cases (26 per cent of the patients) exhibited some degree of swollen arm. Ten of these (9 per cent) were definitely due to neoplasm. Forty-three showed only minimal arm swelling, forty-five showed moderately advanced arm swelling, and twenty-one were far advanced. Therefore, 16 per cent of all our patients had moderate or advanced arm swelling. The cases that are of clinical concern are those with moderate or advanced arm swelling. Eliminating the cases of swollen arm due to neoplasm and including only the patients who had either the radical or the modified radical procedure, swollen arm did not occur in the simple mastectomy group unless it was due to cancer. It means that 21 per cent had a clinically significant swollen arm. The average survival in this group was 4.3 years, and this is about one year less than in the simple mastectomy group.

An attempt was made to determine if this advanced or moderately advanced arm swelling could be attributed to certain surgical teams, and the figures revealed that thirty-one of the sixty-six clinically significant cases could be traced to four surgical groups. One surgical group had 55 per cent of its patients exhibiting moderate to advanced arm swelling. Next surgical team had 38 per cent, the other two showed 33 and 30 per cent respectively.

An additional complication to the usual discomfort on a chronic basis is the incidence of erysipelas. Five of the sixty-six had erysipelas, three of whom had a recurrence of the same at least once. Occasionally there was an associated cellulitis. This would tend to indicate that irradiation does not cause the swollen arm. Furthermore, our highest irradiation doses were in the simple mastectomy cases, and this is the class where "non-neoplastic" arm swelling is the rarest.

It was noted that fifteen patients died within six months of their surgery and irradiation. In retrospect one wonders if the life span had been reduced by violation of the well-established criteria of inoperability as set forth by Haagensen.[1] Briefly they are:

1. When the carcinoma is one which developed during pregnancy or lactation.
2. When extensive edema of the skin over the breast is present.
3. When satellite nodules are present in the skin over the breast.
4. When intercostal or parasternal tumor nodules are present.
5. When there is edema of the arm.
6. When proved supraclavicular metastases are present.
7. When carcinoma is of the inflammatory type.
8. When distant metastases are demonstrated.
9. When any two or more of the signs of locally advanced carcinoma are present: ulceration of the skin; edema of the skin of limited extent (less than ⅓ of breast skin); fixation of tumor to chest wall; axillary metastases more than 2.5 cm. in diameter (proved); fixation of axillary nodes to skin or deep structures.

Radiation Fibrosis

Forty-seven of the 417 cases exhibited some irradiation fibrosis: thirty-seven minimal, eight moderate, and two advanced. In our opinion only the moderate or the advanced fibrosis could be considered as of any clinical importance and they represented ten cases or 2 per cent of the total or 5 per cent of the 211 five-year survivals. Of these ten patients, seven had radical mastectomy, two had modified radical type of surgery, and one had a simple mastectomy. One might draw the conclusion that the incidence of post-irradiation fibrosis is greater in those having the more extensive surgery. Is this due to the de-

creased tisues of the chest wall and axilla? Also those with the extensive surgery received 10 to 20 per cent less irradiation as calculated in air. A complicating factor is the fact that eight of these ten patients had a pre-existing chronic cough or a pre-existing possible bronchiectasis.

Comment

In preparing this paper, perusal of the recent international literature on this subject and knowledge from our local inquiry caused the author to conclude the following: acceptable treatment for cancer of the breast is anything but standardized. One can quote prominent authors to substantiate almost any seemingly unorthodox method of treatment. In fact, Park and Lees (1951) contend that there is no proof that the five-year survival of breast cancer patients is affected by treatment at all. In general, the surgical masters advocate meticulous surgery à la Halsted with or without postoperative irradiation depending upon the individual case and the personal feelings of the surgeon. On the other hand, there is the McWhirter group advocating limited surgery such as a simple mastectomy followed by very adequate meticulous postoperative irradiation. The five-year survival figures are strictly comparable and the same can be said for the Kalamazoo figures.

REPRESENTATIVE FIVE-YEAR SURVIVALS

	Negative Axillary Nodes	Positive Axillary Nodes
Nohrman, 1949 Radiumhemmet Sweden	66%	41%
Haagensen, 1949 Presbyterian, N. Y.	77%	51%
McWhirter, 1950 Royal Infirmary Edinburgh, Scotland	89%	44%
Kalamazoo	76%	40%

Summary

1. In our study 411 of the 417 patients were women. Only three of the six men were alive at the end of the two years, indicating the increased gravity of the disease in the male.

2. The median age of the woman contracting breast cancer is fifty-four.

3. The radical mastectomy was the commonest surgical procedure in this series with an average survival of 4.85 years.

4. The simple mastectomy had the best survival rate, 5.2 years.

5. Sixty-six patients (14 per cent of the group) had a clinically significant swollen arm problem. Twenty-one per cent of patients with the modified or radical mastectomy had a swollen arm of clinical concern.

6. Four surgical teams had between 30 and 55 per cent of their patients develop clinically significant swollen arm problems.

7. Average survival of patients with the moderate or advanced swollen arm not due to neoplasm was 4.3 years. Five of these sixty-six patients had bouts of local erysipelas probably as a result of this swollen arm.

8. Seventy-six per cent of our patients with microscopically negative axillary nodes at the time of surgery survived at least five years.

9. Forty per cent of our patients with positive axillary nodes at the time of surgery lived five or more years.

10. Radiation fibrosis occurred in ten of the 417 patients, i.e., 2 per cent. Thirty-seven showed minimal roentgen evidence of fibrosis with scant clinical symptoms, and this virtually completely regressed. The fibrosis usually occurred four to six months following the irradiation and usually disappeared six months later.

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Cancer of the Cervix Recurring after Radiation Therapy

Surgical Treatment

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THE standard treatment for cancer of the cervix in the United States is the application of radium to the lesion and x-rays by means of pelvic portals. Details as to dosage vary with the individual carrying out of the treatment. It has been repeatedly demonstrated that patients can be cured by radiation therapy. The fact remains, however, that the majority of patients with cancer of the cervix are still dying of their disease. This implies that they did not respond to radiation therapy or that responding at first, the disease recurred and there was a fatal outcome.

The history of cancer of the cervix indicates that it is often of relatively slow growth and that it may extend locally and involve adjacent viscera before it produces metastases. It appears, therefore, that cancer of the cervix which is not controlled by radiation, or recurs in the pelvis, might prove amenable to surgical attack.

The thorough studies of Truelsen[2] on the fate of patients in whom the lesion is not controlled by radiation, and in those who present recurrences after apparent control of the lesion by radiation, shed light upon the unhappy outlook for these women. For example, in 390 patients who failed to show clinical healing of their cancerous cervices after radiation therapy, all died within twenty-four months. Of 704 patients who exhibited clinical healing of the lesion following radiation therapy and after a period of six months or more showed recurrences, about 95 per cent died during the twenty-four months following the detection of these recurrences. About 3 per cent were alive at the end of the third year. These represented fortuitous instances wherein recurrences were in the cervix, limited in size, and were treated by radiation or the recurrences destroyed by actual cauterization.

In general, reradiation is not considered effective in the control of recurrences of cancer of the cervix. There are exceptions to this, but they are so few that such secondary treatment should not be relied upon to control the recurrent disease. There are reports in the literature that purport to show the efficacy of reradiation. However, these reports are not well documented. In most instances the diagnosis of recurrence is based upon the clinical findings of indurations in the parametria that were not previously apparent, and the assumption made that recurrences were present. The patients were reradiated and their continued survival was thus interpreted as "cure" of the recurrences. Dr. Hans Kottmier, director of the Gynecologic Clinic of the Radiumhemmet in Stockholm, told me that some fifty patients who, following initial radiation, developed indurations in the pelvis and sometimes a swollen leg, and who clinically appeared as though they had recurrences, were followed without treatment and all survived five or more years.

If radiation is therefore ruled out as a repeat treatment for recurrent or uncontrolled cancer of the cervix, what else is there to recommend? The only other treatment is surgery. There are five operations which may be envisaged; the choice of any one of these depends upon the extent of the recurrent or uncontrolled disease and the patient's general condition. These may be described as follows (preliminary report previously published[1]):

1. Radical panhysterectomy and pelvic node excision (all pelvic nodes, fatty tissue and most of pelvic peritoneum; sciatic nerve routes are denuded). Indications: the recurrent disease is limited to cervix, and/or vaginal vault and bladder or rectum are not involved; parametria may be indurated; the patient must be a good operative risk.

2. Classical Wertheim. This includes removal of uterus, appendages, parametria, external iliac and obturator nodes. Indications: recurrent disease is limited to cervix and/or upper vagina. Parametria may feel indurated but rectum and/or bladder are not involved. The patient is a fair operative risk.

3. Radical vaginal hysterectomy (Schauta). The uterus and as much parametria as possible is removed by the vaginal route. Indications: recurrent disease is limited to cervix or uterus and upper vaginal vault. Parametria are not indurated.

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The patient is not a good risk for a radical abdominal operation.

4. Exenterations. Anterior: uterus, adnexae, pelvic nodes, bladder are resected en masse, for cancer that invades bladder, but rectum is free. Ureters are implanted into rectum.

5. Total exenteration. All pelvic viscera, with formation of wet colostomy, for cancer that invades bladder and rectum.

These are operations of desperation, attempted when cancer has still not apparently spread beyond the pelvis.

Naturally the results of any surgical procedure indicate its value. Operations for postradiation cancer of the cervix were first carried out essentially as palliative operations, but the passage of time has shown that they may afford five-year cures.

The results in a series of seventy-five patients operated upon between September, 1947 and July 1, 1950, i.e., about five or more years previously, are presented in Table I.

The over-all five-year salvage rate was 32 per cent, being 61 per cent for patients with recurrent or uncontrolled disease limited to the cervix, and decreasing to 20 per cent where bladder or rectum or both were involved. Even the latter figure is of significance in view of Truelsen's studies, mentioned above, where all patients not primarily responding to radiation were dead in twenty-four months and only 1.5 per cent were alive at the end of the third year following detection of their recurrences after a period of apparent healing of the lesion under radiation therapy.

A review of the type of operation performed in this series of seventy-five patients is summarized in Table II.

In radical cancer surgery there are inherent risks. The mortality in this series is summarized in Table III.

Surgical mortality is defined as death within 30 days.

For those who did not survive five years, the postoperative longevity is as shown in Table IV.

These data would indicate that if the patients who were not destined to survive following what was judged to be the appropriate operation, survived (excepting the surgical deaths) for an average of fourteen months following operation, and in view of Truelsen's results (mentioned above), it would appear that their lives were not necessarily appreciably shortened.

TABLE I.

	Total No.	Living 5 or more yr.	Dead	Per cent 5 yr. Cures
When recurrent carcinoma was confined to cervix	18	11	7	61%
When recurrent carcinoma spread to vaginal vault	9	3	6	30%
When recurrent carcinoma spread to parametria	7	2	5	30%
Recurrent carcinoma metastasized to pelvic nodes	1	0	1	—
Recurrent carcinoma invaded bladder and/or rectum	40	8	32	20%
Totals	75	24	51	32%

TABLE II

Operation	*No. Patients*	*5 yr. survivors*
Classical Wertheim	6	4 (66%)
Radical hysterectomy and pelvic nodes	23	12 (52%)
Anterior pelvic exenteration	11	3 (30%)
Total pelvic exenteration	35	4 (11%)
	75	23 (30%)

TABLE III

Operation	*No. Patients*	*Surg. Mortality*
Classical Wertheim	6	0 (%)
Radical hysterectomy and pelvic nodes	23	0 (%)
Anterior pelvic exenteration	11	3 (30%)
Total pelvic exenteration	35	6 (16%)
	75	8 (10%)

TABLE IV

Operation	*No. not Surviving 5 yr.*	*Av. Postop. Life*
Classical Wertheim	2	29 mo.
Radical hysterectomy and pelvic nodes	11	14 mo.
Anterior pelvic exenteration	6	4 mo.
Total pelvic exenteration	25	14 mo.
Totals	44	Gen. Av. 14 mo.

Discussion and Conclusion

If a patient is treated for cancer of the cervix by radiation, she should be carefully followed and examined at frequent intervals. If clinical evidence of recurrence is detected, biopsy evidence for this should be sought. If there is such evidence,

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Early Carcinoma of the Prostate

Diagnosis and Treatment

By Fletcher H. Colby, M.D.
Boston, Massachusetts

THREE things are important in regard to carcinoma of the prostate. It is surprisingly common. The diagnosis of early lesions is not easy. Cancer of the prostate can be cured.

Incidence

Figures from many sources indicate the frequency of prostatic cancer. Five of every 100 men over sixty, it is said, will eventually have this disease. According to public health and insurance company statistics, about 700,000 men each year in this country reach the age of sixty.[2] Each year, therefore, if these figures are correct, 35,000 men will develop cancer of the prostate.

Even more impressive is the incidence of prostatic cancer found at routine autopsy. Several different investigators have reported that there is histological evidence of this disease in from 14 to 50 per cent of men over fifty. These observations are based on the finding of small microscopic areas of cancer within the gland. Their clinical significance is not clear, for it is not known how many of these men would have developed clinically detectable cancer had they lived.

Next to cancer of the stomach, cancer of the prostate is the commonest malignant tumor as a cause of death in men over sixty. In the United States there are 11,000 deaths annually from this disease.[2] For years it has been true that about 20 per cent of obstructing prostates are malignant.

Such figures as these speak for the high incidence of prostatic cancer. There seems to be no real evidence that the incidence of this disease has increased alarmingly during the last twenty years.

In spite of the frequency of cancer of the prostate probably comparatively few cases are recognized early and many fewer are subjected to radical surgery. The reasons are clear. By itself, early cancer of the gland causes no symptoms. When obstructive symptoms occur, the lesion is either associated with benign hypertrophy or is so advanced that surgical care is impossible. About one half of our own total prostatectomies for early cancer had no urinary symptoms. Their lesions were detected by rectal palpation during a routine physical examination.

It is apparent that many clinics and many urologists fail to advise radical surgery for early prostatic cancer. Otherwise, more of these operations would be performed. This is because many are skeptical about this operation in spite of favorable reports of a very respectable five-year survival rate clinically free of disease. The fear of urinary incontinence, damage to the rectum and impotence are considerations. The first two are operative hazards. Impotence is inevitable. Castration and/or estrogen therapy are less hazardous and easier to recommend. Although castration and/or estrogen therapy may render this disease quiescent for several years, the only possibility of cure at present lies in radical surgery.

During the five-year period 1946 to 1950, two hundred and nineteen patients with cancer of the prostate were admitted to our urological ward service. Forty-one total prostatectomies for carcinoma were performed during these years. About 19 per cent of these patients, therefore, were considered suitable for this operation. This is a higher ratio than many clinics have reported, other figures varying from 5 to 20 per cent. Applying this to the yearly expected incidence of this disease there would be at the least 1,750 and at the most 7,000 total prostatectomies performed in this country. Obviously a very small number of men who have this disease receive what we believe is adequate treatment.

Diagnosis

Proper treatment is based on correct diagnosis. The diagnosis of early prostatic cancer is not easy. Rectal palpation, needle biopsy and perineal exposure with immediate frozen section are the methods we use. Other diagnostic methods have not been reliable enough for us to depend upon them as indications for radical surgery. Serum acid phosphatase determinations are of value only as a contraindication to radical surgery when they are elevated. More recent methods of estimating the serum acid phosphatase of prostatic origin based

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on the inhibiting action of L-tartrate on prostatic acid phosphatase may prove to be helpful in the detection of early lesions.[1] Cytological examination of expressed prostatic secretion has not been an aid in diagnosis in our experience.

How accurate have these three methods of making a diagnosis been?

Rectal Palpation.—In 193 cases of suspected prostatic disease examination by the rectum made the correct diagnosis in 68 per cent. It was incorrect in 32 per cent.

Needle Biopsy.—In 103 patients in whom bits of tissue were removed with the Silverman needle the correct diagnosis was made in 78 per cent. Needle biopsy was unsatisfactory or failed to make a correct diagnosis in 22 per cent.

Perineal Exposure and Frozen Section.—This was the most accurate diagnostic procedure. It was correct in 92 per cent of our cases and incorrect in 8 per cent. Errors were due chiefly to the removal of inadequate tissue and to the difficulties of the microscopic examination of tissue hurriedly fixed and stained.

Total prostatectomy was performed in forty-six of our cases without a histological diagnosis of cancer. Here the operator depended upon his preoperative impression from rectal examination and the consistency of the gland at the time of perineal exposure. He was correct 65 per cent of the time but wrong in over one-third of the cases and proceeded with an unnecessarily radical operation. Total prostatectomy should be performed only after a histological diagnosis of cancer has been established.

From 1933 to 1954 one hundred and seven total prostatectomies for suspected early cancer were performed on our ward service. Many were done by the resident staff. About an equal number of these operations done on the private services are not included in this report. Eighty-six of these 107 patients had cancer. Twenty-one had benign lesions suspected of being malignant. Most of the operations followed the perineal technique described by Dr. Hugh Young. A few patients who had very large glands had a combined abdominoperineal operation.

The mortality following this procedure has been low (about 5 per cent), complications were few, and the functional results have been reasonably good. Eighty-eight per cent of the patients eventually had good or fair urinary control and required no apparatus to keep them dry. About 74 per cent had perfect control. Twelve per cent were incontinent. Many of these, however, remained dry at night but when they were active some sort of apparatus was necessary.

Adequate operation means the removal of the entire prostate with its capsule, the prostatic urethra and part of the bladder neck, the seminal vesicles and intervening fascia. A study of these tissues removed at operation taught us certain interesting facts. Although clinically, malignant disease often seemed to be limited to one small area within the prostate, histological examination showed that frequently there were other unsuspected foci of cancer present. This was demonstrated by the examination of sections of the entire prostate. Neoplastic tissue often seemed to be multicentric in origin.

Tumor involvement of the capsule of the prostate and invasion of the perineural lymphatics have both been considered to be ominous features of this disease. Both were present in about 70 per cent of our cases but, as far as I could determine, their presence had no effect upon prognosis.

Invasion of the seminal vesicles, on the other hand, was a serious feature. Tumor extention along the sheaths of the vesicles is a favorite course for the spread of tumor cells. This had occurred in 38 per cent of our patients who were treated by total prostatectomy. The seriousness of this feature is evident from the fact that when the seminal vesicles were invaded, 25 per cent of the patients died of cancer within three years. When no such invasion was found, only 3 per cent died within three years. Invasion of the seminal vesicles then was an ominous sign and was regarded as an indication for castration and estrogen therapy. The seminal vesicles always should be completely removed.

Castration and/or estrogen therapy were used in addition to total prostatectomy in some of our patients who were operated upon before 1949, but these measures had no effect upon the five-year survival rate of patients reported clinically free of disease. Six of our fifty patients operated upon five or more years ago were castrated. Three patients died of cancer within about three years, one died of unknown causes, and one cannot be followed. The sixth patient, castrated at the time of total prostatectomy, is alive nine years later with questionable recurrent disease and is not regarded as a five-year cure.

End-results

Cancer of the prostate is a variable disease. Some afflicted individuals live for years apparently affected little if any by their neoplasm. Others succumb quickly. The histology of these tumors has not been very helpful in telling why this is so, except that the rapidly growing undifferentiated neoplasms usually respond poorly to any treatment. The average duration of life for patients with untreated cancer of the prostate is probably less than two years.

Seventy-one of our patients with prostatic cancer had total prostatectomies three or more years ago. About 62 per cent lived for three years apparently free of disease. Eleven per cent died of cancer. About 12 per cent died of other causes. About 4 per cent are alive with recurrent disease. Three years is too short a period to fairly evaluate this operation.

Fifty patients were operated upon five or more years ago. Fifty per cent lived for five or more years clinically well. Twenty per cent died of cancer and an equal number died from other causes. One patient who is alive nine years after total prostatectomy and castration may have recurrent cancer. If a patient survives for five years after this operation and has no evidence of recurrent disease, his chance of cure appears to be good since only 4 per cent of our patients developed recurrent cancer after the five-year period. However, survival for five years after radical surgery is no guarantee that this disease has been cured.

Conclusions

There is a reasonable chance that cancer of the prostate may be cured by total prostatectomy if the disease is detected early. Such cases usually are free of symptoms, the lesion being suspected at the time of routine rectal examination. The most accurate method of diagnosis is by perineal exposure and frozen sections of tissue removed from a suspected area.

The results of total prostatectomy for early prostatic cancer compare favorably with those for the surgery of cancer of other regions. Functional results after operation are reasonably good. The five-year survival rate clinically free of disease has been 50 per cent.

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CARCINOMA OF THE LUNG

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While these scientific studies are of paramount importance, statistical clinical reviews of cancer of the lung, such as this report from Mount Carmel Mercy Hospital, may be highly informative along many lines of thought and complementary to strict laboratory research.

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CARCINOMA OF THE BREAST IN PREGNANCY

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Roentgenological Studies of the Colon

Indications and Significance of Findings

By Walter A. Fansler, M.D.
Minneapolis, Minnesota

I WISH to express my appreciation for the honor of presenting the Annual Beaumont Oration before the General Assembly of the Eighty-seventh Meeting of the Michigan State Medical Society. Dr. Beaumont should be an inspiration to all of us, particularly to members of the Michigan State Medical Society, since it was here that so much of his work was done. With little scientific equipment and under most adverse conditions his observation proved certain physiological functions of the stomach which had previously been only a matter of conjecture. His work is a striking example of the truth that valuable medical contributions need not depend upon elaborate scientific equipment. It is the duty of each of us to try to make some contribution, no matter how small, to the common fund of medical knowledge. My discussion is to call attention to some of the most recent developments in the diagnosis and treatment of conditions of the colon which I believe are not, as yet, fully appreciated by many physicians.

Perhaps the most outstanding causes for the increased interest in colon studies are the present interest in the early diagnosis of cancerous or precancerous lesions and the fact that operations on the colon carry a much lower operative mortality than formerly. With operative risks varying from 10 to 40 per cent, operations upon the colon were more or less reserved for cancer, obstruction or other lethal conditions. Small tumors, ulcerative colitis, diverticulosis, diverticulitis and recurrent volvulus were regarded as conditions to be observed and treated medically except in case of extreme emergency. With present mortality rates reduced to a minimum, colon surgery is no longer regarded as a major hazard.

It is not my intention to dwell unduly upon the symptoms and diagnosis of lesions of the large bowel, in which indications for study are obvious and positive x-ray findings a foregone conclusion. Rather, I wish to discuss symptoms which are frequently overlooked or are more or less disregarded and to call attention to the fact that small lesions which were seldom revealed by older x-ray methods are presently being demonstrated almost routinely. The importance of the diagnosis of small polypoid lesions lies in the fact that 10 per cent of them are cancerous and the remainder are potentially malignant. We have almost reached the limit of radical operation for cancer of the colon and rectum, so little more can be expected in this direction insofar as increasing our percentage of cures for this disease. Our greatest chance for extension of cure lies in early diagnosis and elimination of the focus while the disease is still localized or is in the precancerous stage.

There are a number of symptoms which should alert the physician to the advisability of x-ray studies. Very early cancerous or precancerous lesions do not bleed. Their discovery can only be due to a fortuitous routine examination. In most instances the earliest clinical evidence of the disease is the passage of blood. Also, bleeding is the symptom, aside from pain, which most frequently brings the patient to the physician.

The amount and character of the blood passed has been considered significant as to the probable cause and site of bleeding. Time is spent discussing whether the blood is mixed with the stool, is on the surface of the stool, is light or dark, clotted, mixed with mucus or precedes or follows bowel movement. Such facts make an interesting academic discussion, but the crux of the situation is that the patient has passed blood and the passage of any kind or amount of blood is abnormal. A thorough examination is indicated in all instances. This means a careful proctoscopic and, in many cases, roentgenological examination. A physician is never justified in prescribing treatment for bleeding without one or both of these examinations. Proctoscopic examination may definitely reveal the source of bleeding. If such a source is revealed and the blood is limited to the bowel below the point of proctoscopic examination, x-ray studies may not be necessary. If, however, a cancerous or precancerous lesion is discovered, x-ray studies should be made since in approximately 3 per cent of cases another lesion or lesions will be present above the reach of the proctoscope.

The presence of gross amounts of blood is sel-

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dom overlooked so I wish to call attention particularly to the great significance of the presence of a few small pinpoint clots of dark blood or thread-like streaks scattered over normal bowel mucosa. It is this type of bleeding which the physician may disregard. A colonic lesion is present in the majority of these cases. In most instances the lesion will be a small polyp or early carcinoma, although occasionally a scirrhus napkin ring type of carcinoma may be encircling the entire bowel. In any event, the observation of this type of bleeding is extremely significant and careful x-ray studies are indicated in every case. If with this type of bleeding the x-ray study is negative, we believe it should be repeated immediately. If it is still negative and bleeding persists, the examination should be repeated at regular intervals. In our experience on several occasions later examinations have demonstrated a lesion. We believe this type of bleeding to be the one most significant slight symptom indicating the presence of a colonic lesion.

Common symptoms other than bleeding which are indications for x-ray studies of the colon are unexplained changes in bowel habit, alternate diarrhea and constipation, recurrent abdominal cramps of suspected colonic origin, tenderness along the colon or segments of the colon or tumefactions which may involve the bowel. These symptoms are frequently due to functional conditions, particularly in younger individuals, and more often than not are of medical rather than surgical significance. However, it has been our experience that most patients welcome the suggestion of x-ray examinations. The fear of cancer lurks in the minds of most of these patients and relief of this fear is well worth time and expense involved in x-ray studies.

If colon studies are decided upon, it is needless to say that the barium enema is the only safe and satisfactory method. Oral ingestion of barium will seldom reveal a small colonic lesion, and if a gross lesion with obstruction is present, future surgical intervention will be more difficult. To be of value, roentgenological studies must be well done. Inadequate examinations confuse rather than clarify the issue. Insofar as gross lesions are concerned, I am sure a good x-ray technician will do a very creditable procedure. However, the finer phases, and by this I mean the demonstration of lesions 0.5 cm. or less in diameter, require the services of a trained roentgenologist who is especially interested in this phase of study.

A bowel free of stool is the prime requisite of a satisfactory examination so the preliminary cleansing must be thorough. Adequate examination consists of fluoroscopic examination followed by films taken from different angles and with the patient in different positions, the use of special enema media and both routine and air contrast examinations. Films alone are often inadequate for diagnostic purposes. In films there are frequently overlapping segments of colon or regurgitation of the opaque media into the ileum which obscures a portion of the large bowel. Manipulation during fluoroscopic examination will straighten out these overlapping areas and allow adequate examination of all segments. Change of position of the patient will also permit better visualization of all portions of the colon and is an aid in differentiating between polyps and diverticula.

The most troublesome point of diagnosis is the differentiation between small polypoid lesions and retained particles of stool. In the case of a small sessile polyp, a definite diagnosis should not be made on the basis of one examination. If such a lesion is thought to be present as a result of the first study, the examination should always be repeated after a second thorough preparation. If the same defect is noted in the same location, it is then safe to conclude that an organic lesion is present and that the original shadow was not due to a particle of stool or other artefact. In some cases even a small polyp may have a definite pedicle, and if a pedicle can be definitely demonstrated on the first examination, a second examination is not necessary. It is only where a pedicle can be demonstrated that a positive diagnosis of a small lesion is possible from one examination. Repeated x-ray examinations are unpleasant but they are much less serious and less disconcerting than to open an abdomen and find no lesion present.

There is one complication which often renders the demonstration of small polypoid or invasive lesions difficult or even impossible. This is the presence of diverticula, diverticulitis or the residual changes due to this disease. In diverticular disease we consider the continued or intermittent presence of small amounts of blood as noted in the stool or seen on the bowel wall during proctoscopic examination of extreme significance. This type of bleeding seldom occurs from diverticula,

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Liposarcoma of the Foot

Case Report

By Sam Sugar, M.D., and
Bernard M. Murphy, M.D.

Jackson, Michigan

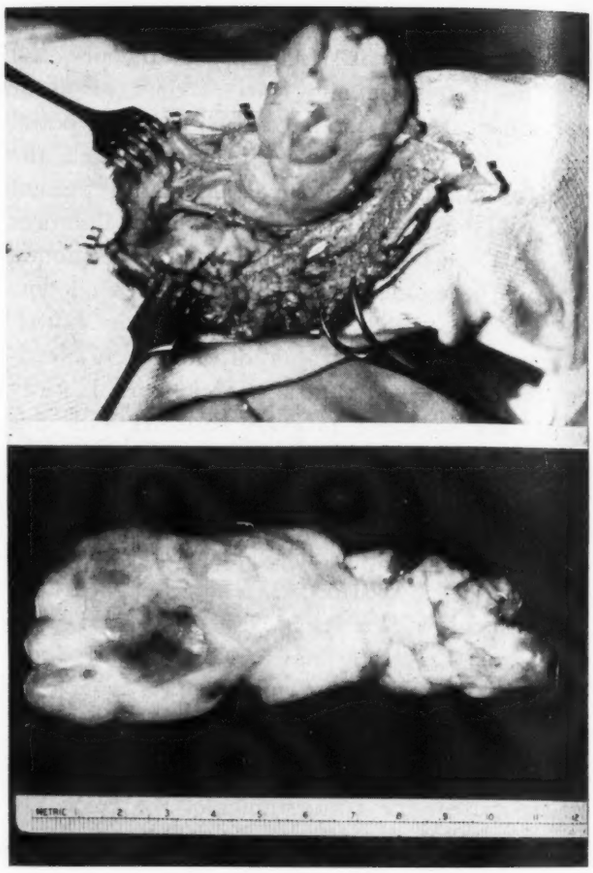
A SEARCH of the available literature indicates that liposarcomas are comparatively rare tumors. Stout[5] in his excellent discussion states that he only was able to find forty-one cases in the past thirty-seven years at Columbia University. Moreland and McNamara[3] found nine cases in a review of 16,000 of all types of tumors. Other authors have reported isolated cases in various locations of the body. No cases of such a tumor in the foot has been reported.

However, this case is being presented, not because of its rarity, but because of the course it followed. Whereas all reports have noted the serious potentialities of these tumors, yet the general feeling is that these tumors are not very malignant; local excision and radio therapy are usually sufficient, since metastases occur very late or not at all. Yet one must keep in mind that these tumors are not to be treated lightly, and unless early radical treatment is instituted, the prognosis may be hopeless. The following case brings this out quite forcibly.

Case Report

The patient was a white male physician, aged forty. In November, 1950, following a slight fall down some stairs, he noticed some pain and a mass in the plantar surface of the left heel. This persisted and in February, 1951, he was operated upon. X-rays at the time were negative for bone pathology. The patient was in good health otherwise, and physical examination was essentially normal except for the left foot. The past history was noncontributory. At operation a yellowish fatty tumor beneath the plantar fascia was found. It extended from the os calus to the metatarsal heads. It gave the gross appearance of a lipoma. It shelled out easily by finger dissection and appeared well encapsulated (Fig. 1). It measured 3½ inches in length and 2½ inches in width. There were a number of digitations at the distal end of the tumor, giving the appearance of small toes. In fact the tumor had somewhat the appearance of a miniature foot (Fig. 2).

The microscopic report was as follows: "Sections of the tumor mass reveal a very cellular growth in some areas which is well circumscribed but not encapsulated. Cells are without organized structure and



Figs. 1 and 2.

within the loosely textured stroma there are numerous small blood vessels. Cells comprising the tumor vary greatly in size and shape. Some are adult type fat cells with large vacuoles representing cytoplasm, with compressed nuclei along their border. Still other cells have elongated to ovoid nuclei, with small vacuoles of fat in their cytoplasm, these most frequently being bipolar. Still other cells have large elongated nuclei, without fat being demonstrated within their cytoplasm. A few cells have scanty cytoplasm, and large nuclei which show some clumping of their chromatin, and in a few instances very prominent nucleoli, and an occasional nucleus having as many as three nucleoli. A few areas show recent hemorrhage." The microscopic diagnosis was liposarcoma.

According to the classification described by Stout,[5] the tumor could be placed in the poorly differentiated type. Nothing else was done besides the local excision. The patient got along well for one year. In February, 1952, due to some pain in the original site the patient was reoperated upon. A recurrence was found with signs of invasiveness. The left leg was amputated below the knee. The patient was fitted with a prosthesis and got along well for about eighteen months in apparent good health.

In July, 1953, he was suddenly seized with acute pains in the right lower chest radiating forward from back. Myelograms showed a block at levels of D-9

and D-10. A laminectomy was done and an extradural tumor mass was found. It was impossible to remove it all. Microscopic diagnosis confirmed that it was metastatic from original tumor. He was given a course of roentgen therapy. While he was receiving this, a mass was felt in the left thigh. This was excised and also found to be metastatic. This area also received radiation.

In October, 1953, he developed bilateral sciatic pain. Another laminectomy was done at level of L-4 and L-5. Further metastases were found. A palliative rhizotomy was done, and radiation to this part was given. About two weeks later the patient noticed two masses in the right thigh and also developed a droop of the right upper lid. He showed no other neurological signs.

It was decided to try a course of radioactive cobalt therapy. While he was receiving this, he developed complete paralysis of the right upper lid; also x-rays revealed pulmonary metastases. Following the cobalt treatment, he went down hill rapidly, and terminally developed abdominal metastases with intestinal obstruction, and metastases in the soft tissue of the right shoulder and chest. He died in February, 1954, about three years from the date of the orginal operation for local removal. No autopsy was obtained.

Summary

A case of liposarcoma of the foot is reported that progressed rapidly to a fatal outcome. Rapid and diffuse metastases occurred in spite of local excision, later amputation, and intensive radiotherapy.

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ROENTGENOLOGICAL STUDIES OF THE COLON

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and if present, it frequently indicates the existence of a polypoid or invasive lesion. If persistent bleeding is present in these cases, we believe surgical exploration to be indicated regardless of the inconclusiveness of roentgenological findings.

The development of the sulfonamides, antibotics, the use of transfusions and other intravenous medications and supplements have reduced the risk of operations upon the colon to a minimum. Except in the case of the extremely aged and persons with serious systemic changes, colotomy, the removal of segments of the colon or the entire colon involves little more risk than other less extensive abdominal procedures. It need no longer be reserved as a last resort for patients with obstructive or far advanced carcinomas or more or less hopeless conditions. Many patients who have in the past been treated medically for conditions which have caused more or less constant discomfort or semi-invalidism are being resorted to normal health and activity by safe surgical procedures.

In conclusion, I wish to stress the following points:

1. It is possible to reveal minute lesions of the colon by proper x-ray studies.

2. Unless the x-ray studies are well done, they are a handicap rather than a help, since a negative report based on an unsatisfactory examination may give both the patient and physician a sense of false security.

3. The presence of minute quantities of blood, particularly when observed on a normal bowel wall during proctoscopic examination, is most significant.

4. Where no source can be shown by the first examination, the study should be repeated.

5. The discovery and removal of small cancerous or precancerous lesions is essentially the only chance of appreciably increasing the rate of cure of colonic cancer.

6. Because of lessened operative mortality, many disabling conditions due to colonic conditions which have been treated palliatively can and should be relieved by surgical measures.

Calhoun County Medical Society Cancer Registry

By James W. Hubly, M.D.
Battle Creek, Michigan

THE Calhoun County Medical Society, believing that valuable information could be derived from a continuing system of cancer patient reporting and follow-up, in 1949, extended an invitation to the Calhoun County Unit of the Michigan Division of the American Cancer Society to assist in formulating such a program. Representatives of the Medical Society and its Cancer Committee, the County Health Department, the local hospitals, the Michigan State Board of Health, the Calhoun County Cancer Society, and other interested organizations met and formulated plans for the establishment and operation of the Calhoun County Medical Society Cancer Registry.

The registry is the property of the Calhoun County Medical Society and is housed, operated and financed by the Calhoun County Unit of the American Cancer Society.

During the first five years of its operation the registry has become the focal point of the county cancer control program. It is now functioning as the central registry for the several hospital cancer registries in the county. As a central registry, this facility provides for each of the co-operating hospitals a service which greatly simplifies the problems of conducting separate hospital cancer registries in conformity with the American College of Surgeons standards for approved hospital cancer programs.*

There are three primary specific purposes for the cancer registry:

1. To serve as the foundation for the cancer control program of the county.

2. To function as a central registry for the hospitals of the county, providing follow-up service and analysis of records on their patients.

3. To provide the necessary data for measuring the magnitude of the problem, for comparison with other communities, and for evaluating the effectiveness of control measures.

The physical organization of the central and satellite hospital registries is as follows:

The central cancer registry consists of three sets of files:

1. A name file: A card for each person ever entered in the registry, filed alphabetically and containing in addition to the person's name his registry case number and other pertinent identifying information.

2. A case file: A folder containing as complete, accurate, and up-to-date information as is available on every case of cancer in the county. This folder normally contains one or more physician's initial report forms, a hospital report form, a pathologist's report form, and periodic follow-up report forms. In addition, memoranda relative to special services needed by the patient and provided by the cancer society or other interested agencies are filed here. In the event of death, a copy of the death certificate and autopsy report, if available, complete the record. These records are filed by case number.

3. A follow-up file: A monthly rotating card file indicating the date on which the next follow-up on each case should be made.

The hospital registry consists of two sets of files:

1. A name file: A card for each person admitted to the hospital and discharged with a diagnosis of cancer. This card provides the central registry case number by which the case folder may be located in the hospital case file.

2. Hospital case file: A folder containing a copy of the central registry's hospital report and follow-up form.

The central registry has many sources of information. Physicians send in cards on all cases of cancer or suspected cancer under their care. Dentists, who are excellent sources of cancer case finding, particularly for cancer of the mouth, lip, and pharynx, do the same. The record librarians of the hospitals pull the records for all cancer patients, and volunteer personnel from the cancer registry abstract the cases onto the registry hospital forms. Copies of diagnostic x-ray mate-

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Read at the American College of Surgeons Clinic (Michigan Chapter) March 9, 1954, at Detroit, Michigan.

Dr. Hubly is a member of the Board of the Michigan Division of the American Cancer Society.

*The Calhoun County Medical Society and the Calhoun County unit of the American Cancer Society are particularly indebted to Dr. B. Aubrey Schneider and Dr. Daniel Horn of the statistical research section, medical and scientific department of the national office of the American Cancer Society, who drew up the original proposal on the basis of which the Registry was established, and who have maintained a continuing consultative and advisory relationship to the Registry.

rials are made available to the registry by the radiologists. The pathologists in the county submit to the registry a carbon copy of their reports on all tissue specimens and autopsies in which a diagnosis of malignancy is made.

The county health department submits to the registry monthly lists of all deaths occurring in the county during the month containing identifying information and the cause of death. In each case of death caused by cancer the county health department furnishes without cost a copy of the death certificate. Quarterly lists of Calhoun County resident cancer deaths are furnished by the vital statistics office of the Michigan State Board of Health. All death information thus obtained is checked against the registry files and death certificates are obtained from the county clerk's office on all cases dying of causes other than cancer. The follow-up on living cases is carried on by cancer registry personnel working through the physician in charge of each case.

For the purpose of obtaining as complete and accurate information as possible on each case of cancer, the following four forms are used: (1) physician's initial report form, (2) hospital record form, (3) pathologist's record form, and (4) follow-up report form.**

The responsibility for planning the statistical analysis of the data collected by the registry has been assumed by the statistical research section, medical and scientific department of the American Cancer Society in New York. The case records accumulated in the registry are coded by registry personnel, and the routine coding of new follow-up information is done as the reports are received. Periodic analyses and special studies are made at the request of the physicians and hospitals of the county.

With the records accumulated thus far, the central cancer registry has developed a workable file which aids in the administration of the cancer control program, the periodic evaluation of the cancer problem in the county, and also meets the needs of the physicians who are interested in the cancer problem.

The registry has been an effective agent for professional education in bringing the problems of cancer at a community level to the attention of the practicing physician. It has made the physician aware of the areas in which the diagnosis, treatment, and care of cancer can be improved. It has stimulated physician interest in cancer control. The pooling of records in the central cancer registry makes possible the impartial study of cancer as it exists and as it is being handled throughout the county.

One effect of the registry has been that of greatly improving the keeping of hospital records as they relate to cancer. This improvement has been brought about through greater interest among the attending physicians, residents, and interns. For example, records are now signed out with more attention paid to the specificity of primary site and extent of disease, and as to whether the treatment was definitive or palliative, and finally, with a statement as to whether the patient is free or not free of cancer when he leaves the hospital.

The central cancer registry has been of great help in establishing the hospital cancer registries in such a way as to meet the minimum standards for approval of a cancer program as required by the American College of Surgeons.

Although the volume of material thus far accumulated by the central cancer registry is not quantitatively spectacular, it is of such quality as to indicate the value and importance of concentrated and co-operative effort in dealing with the problem of cancer control.

**All of the above-mentioned forms are available for distribution at the Calhoun County Medical Society Cancer Registry, 27 West State Street, Battle Creek, Michigan.

The few cancers found among asymptomatic persons, as well as the high cost of each examination, precludes the large-scale financing of cancer detection centers by either governmental or voluntary agencies.

* * *

In Massachusetts, the delay between first cancer symptoms and the first consultation with a physician, and between the first consultation and the first visit to a clinic, have been reduced by one-half during the past twenty-six years.

The importance of evaluating a cancer control program cannot be overemphasized. Those portions of the program which do not achieve results commensurate with the time and money expended should be replaced by other types of endeavor. Methods for appraisal cannot be stereotyped and must be altered according to the type of program.

* * *

Next to curative therapy, there is no greater service that a physician can render to his cancer patient than to relieve him of pain.

Periodic Health Appraisal

Eyes

By Windsor S. Davies, M.D.
Detroit, Michigan

IT IS during the routine physical examination that unsuspected disease may be discovered. This is true of diseases of the eye as well as of other portions of the body. If an adequate ocular examination is not included in routine physical examinations, an important organ is neglected and the advantage gained by recognition of an unsuspected pathologic condition is lost. The discovery of such pathology must then depend upon those who do the physical examinations. A great step forward may be made in the prevention of blindness in this manner.

It is not the purpose of this paper to dwell upon the various diseases of the eye, their differential diagnosis and treatment. Instead, a plan of routine examination of the eye is presented which should give the examining physican an opportunity to recognize or suspect pathology and thereby institute treatment, or, if he deems it advisable, refer the patient to an ophthalmologist for further examination.

Several pertinent questions directed toward uncovering ocular complaints may be included in the routine history. Is vision good in each eye, is there ocular pain, diplopia, photophobia, epiphora, halos about lights, fleeting attacks of blurred vision, or a family history of glaucoma?

Vision may be estimated by using a standard visual acuity test chart at 20 feet, or a reversed visual acuity test chart with mirror at 10 feet (Fig. 1). Vision under 20/20 may only be due to the need of corrective lenses. On the other hand, it may indicate the presence of pathology.

Are the eyes straight? Is there paralysis of one or more extraocular muscles? Can diplopia be elicited? Is nystagmus present? Exophthalmos? Fixation of the eyes on the finger or a source of light should first be made in the primary position to determine if the eyes are straight. Then by following the point of fixation, the eyes are rotated above, temporally, inferiorly, and nasally to demonstrate paralysis if present. While rotating the eyes through these excursions the patient should be questioned as to the presence of diplopia in any field.

A defect in the visual field may be present without the patient's knowledge. Gross defects may be demonstrated by the confrontation method. Seated before the patient and about three feet apart, the physician compares the visual field of the patient with his own. The left eye of the patient and the right eye of the observer are occluded. The uncovered eyes fix upon each other. The finger or a small test object is then brought into the temporal, medial, superior, and inferior fields to demonstrate the presence of a visual field defect. The opposite eyes are then occluded and the procedure repeated.

The eyelids should be examined for the presence of edema, inflammation, and especially for new growths. A malignant tumor obviously should be recognized and removed as early as possible. Tumors of the eyelids, and especially those involving the lid margins, quite frequently present a problem in eyelid reconstruction if resection is necessary, especially if they have attained considerable size. Thus, also from the standpoint of repair and reconstruction, their early recognition is of importance. Examine the lid margins noting inflammation, crusting, eversion or inversion.

To better visualize the conjunctiva for the recognition of acute and chronic inflammation, edema, degenerations, scarring and new growths, the lower eyelid is retracted downward and the upper eyelid everted.

In the older age group particularly, chronic dacryocystitis presents the problem of continued tearing and regurgitation of pus into the conjunctival sac. Such chronic inflammation is not only a nuisance and aggravating to the patient, but, in addition, may act as a focus of infection in inflammation of the external eye. Chronic dacryocystitis may often be demonstrated by applying gentle pressure over the lacrimal sac and observing the punctum for regurgitation of serous or purulent material.

The cornea, anterior chamber and iris are best studied using a binocular loupe and oblique illumination. Corneal inflammation, vascularization, degeneration and scarring, the anterior chamber and variations from normal of the iris are then more clearly visualized and thereby better evaluated. Look for irregularity, inequality or immobility of the pupils. The direct and consensual light and accommodative reflex should be elicited.

Of utmost importance is the part the examining physician can play in the detection of glaucoma so that early treatment may be instituted for the prevention of blindness. According to Schoenberg,[3] this disease accounts for 20,000 persons who are totally blind and 150,000 who are blind in one eye in the United States. Berens and Tolman[1] state that there are approximately one million people in the United States (approximately 2 per cent of the population over forty years of age) who have chronic glaucoma and do not know it. Roper[2] states it most aptly when he says, "As effective treatment of glaucoma depends almost entirely upon early diagnosis, it is of extreme importance to realize that the symptoms of early glaucoma are vague and may easily pass unnoticed by both the patient and the physician. The general practitioner is in a strategic position to contribute to the control of blindness, particularly blindness from glaucoma, since he sees these patients earlier and more frequently than the ophthalmologist. Too often patients are referred to the ophthalmologist too late, after considerable sight has been lost." Because of the increase in the life span, the incidence of glaucoma is expected to increase.

An estimation of the intraocular pressure may be made by manual palpation of the eyeball through the upper eyelid as the patient directs his gaze downward (Fig. 2), or by the use of an instrument such as the Schiotz tonometer applied directly to the cornea (Fig. 3). The accuracy of manual palpation is not high, but if skill has been developed in this procedure by the examiner a very high or low tension may be recognized. Because of this, instrumental tonometry should become a part of every physical examination, the technique for evaluating the intraocular pressure by this method being readily mastered. It is only by this routine method of estimation of the intraocular pressure that the large group of potentially blind patients from glaucoma may be detected and therapy instituted.

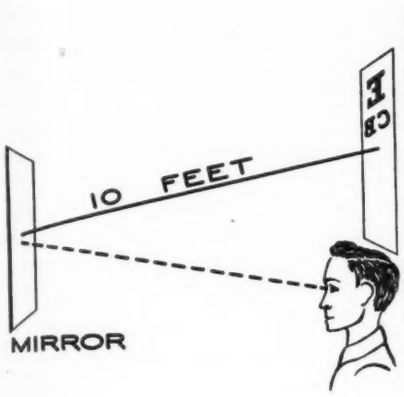

Fig. 1.

Fig. 2.

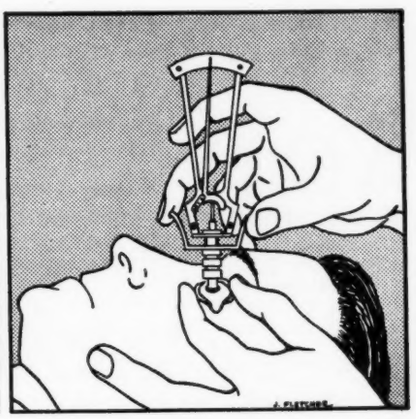

Fig. 3.

The ophthalmoscopic examination of the fundus is frequently quite difficult through the undilated pupil, especially in the elderly patient whose pupils are quite often miotic. If visualization of the disc and retina cannot be obtained through the undilated pupil, a drop of a mild mydriatic such as 3 per cent euphthalmine or 5 per cent ephedrine may be instilled. However, in patients over forty particularly, the danger of precipitating an acute attack of glaucoma must always be considered. It is therefore imperative that the presence of glaucoma be ruled out before the pupil is dilated. Following the fundus examination a drop of a miotic such as 1 per cent pilocarpine or 0.5 per cent eserine should be instilled in the eye.

A darkened room is preferable for examination of the fundus. The transparency of the lens and media is noted. The nerve head is then visualized, noting its size, shape and color and if its margins are clear and well defined. Is there hyperemia, congestion, elevation, hemorrhages and exudates as seen in optic neuritis and papilledema or pallor as seen in optic atrophy? The retinal vessels are then followed from the nerve head to the periphery noting variation in their calibre and character. Arteriosclerosis of the retinal vessels, if present, should be recognized. The macula lies two disc diameters temporal to and slightly below the center of the disc. If there is difficulty in locating the

(Continued on Page 480)

Acute Yellow Atrophy of the Liver Following Chloramphenicol (Chloromycetin) Therapy

By Vernon C. Abbott, M.D. John J. Marra, M.D., and James W. Gell, M.D.
Pontiac, Michigan

A RELATIONSHIP between chloromycetin administration and liver necrosis has recently been suggested.[8] The following case merits reporting since it shows, in our opinion, such a direct relationship.

Case Report

Clinical History.—The patient, a fifty-three-year-old, white housewife, was admitted to the hospital on May 7, 1953, for treatment of a fracture of the right ankle of approximately two weeks' duration. She had fallen off a step and suffered a triad malleolar fracture with compounding medially which had been treated at another hospital by simple suturing of the external tissue wound. A Penrose drain had been sutured into the wound. Soon after, the wound began to drain and there was no improvement noted. Because of this, the patient was transferred to Pontiac General Hospital.

A physical examination at that time showed a well-developed, well-nourished, white woman in no acute distress. The rest of the physical examination was within normal limits with the exception of the right foot. Here, the right ankle showed a gross deformity with an infected, sutured wound draining purulent material from the antero-medial surface. The wound was slightly painful. Urinalysis was negative. Blood examination revealed 12.4 grams of hemoglobin. Red blood cell count was 4,300,000. White blood cell count was 10,900, with 65 polymorphonuclear cells, 29 lymphocytes, 5 monocytes and 1 eosinophil.

The wound was opened widely and counter incisions were made on the lateral aspect to drain an abscess formation. Culture from the draining wound revealed the presence of B. coli and staphylococcus aureus. At this time, bacterial sensitivity tests revealed the organisms to be sensitive to aureomycin and chloromycetin. There was slight or no sensitivity with the other antibiotics, namely, terramycin, ilotycin, streptomycin, penicillin, polymyxin and bacitracin. X-ray examination on admission, showed a triad malleolar fracture with marked lateral dislocation.

Four days after admission, the patient had a manipulation and reduction of the fracture and application of plaster cast performed in the surgical operating room. X-ray after application of the cast showed a somewhat posterior dislocation of the foot with lateral displacement. Two days later a pin was placed in the os calcis for skeletal traction and the cast removed, resulting in improvement of the position of the fractured fragments. X-ray at that time, showed only slight displacement posteriorly, of the fractured fragments.

X-ray one month later, revealed no significant change in the position of the fragments. There was very slight evidence of bony union. About four days later, after application of pressure pads, the fracture fragments and the dislocated tibial astragalar joint showed excellent position and alignment. A repeat x-ray, approximately one month later, showed the joint to be maintained in good position. There was evidence now of a small amount of callus formation. The patient showed fairly good therapeutic response and was discharged from the hospital on July 14, 1953, approximately two months and one week after admission, in an afebrile state and much improved, but with a draining sinus anteriorly.

The patient was then followed as an outpatient at the hospital clinic and was seen at about weekly intervals. X-ray taken on July 30, 1953, showed slight callus formation and good position of the fragments of the fibula and tibia. However, there was evidence of nonunion of the fragments of the medial malleolus, and clinically, the ankle joint was limited in all motions. Repeat bacterial sensitivity tests at this time revealed a growth of E. coli and nonhemolytic staphylococcus aureus. The organisms proved sensitive to chloromycetin and resistant to the other antibiotics. Chloromycetin was then prescribed. The patient continued to take capsules of chloromycetin, 250 mg. every six hours four times daily, up to the time of her last admission on October 25, 1953.

At this time, the patient was extremely weak and somewhat irrational for a preceding period of twenty-four hours. The patient developed a progressive icterus with nausea and continued vomiting. There was a high fever and she was admitted to the hospital after being transported there by ambulance. The patient's course in the hospital was rapidly and progressively downhill and she expired the day following admission.

Urinalysis on the last admission, revealed a dark yellow urine with the presence of bile and albumin. Blood sugar was 100 mg. per cent. Serology for syphilis was negative. Sedimentation rate was 33 mm. in one hour. The white blood count was 12,800. Hemoglobin was 13 grams. Differential count revealed 67 polymorphonuclear cells, 24 lymphocytes, 2 eosinophils and 7 monocytes. Physical examination on the last admission, revealed an extremely ill, markedly icteric woman who was moderately obese and thrashing frequently about the bed. The sclerae were markedly icteric. There was no lymphadenopathy. The heart and lungs were negative. The abdomen was soft and the liver, kidneys and spleen were not palpable.

About three hours following death, an autopsy was performed. The significant findings on postmortem examination included marked icterus of the skin and mucous membranes. A bivalved plaster cast covered the right lower leg enclosing the foot and leg to a point just below the knee. There was no adenopathy. The subcutaneous tissues were markedly bile stained. The

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liver was small and the lower edge was felt two inches above the right costal margin. The liver weighed 1,000 gm. The surface was smooth and the capsule was transparent. Sections of the liver showed a mottled yellowish-brown to reddish-brown appearance with complete loss of liver markings. The liver parenchyma was extremely friable and tore with the slightest manipulation. The cut surfaces showed marked congestion.

The gallbladder was contracted and free of stones or other focal disease. There was no obstruction in the biliary system. The ducts entering the duodenum were grossly normal and patent. The kidneys were swollen, weighing 180 gm. and 200 gm. on the right and left sides, respectively. They showed marked discoloration as a result of bile staining. The bone marrow appeared red and cellular. The site of the fracture wound was dry and a crust of grayish scaly material covered the old sinus tract opening. The joint showed no gross pathology.

On microscopic examination, the major findings were confined to the liver and kidneys. Examination of the liver showed complete loss of normal lobular architecture. The liver tissue was almost entirely replaced by a diffuse necrotic process in which only an island of liver cells was recognized. These remaining few islands of cells showed extensive degenerative process with cloudy swelling, fat infiltration and pyknosis of the nuclei. The necrosis was present in all parts of the liver lobules and not limited to any one particular part of a lobule. It involved the periportal, midzonal, and the central areas of the lobule to an equal degree. In some places, the destructive process was so extensive and involved such large areas, that no liver tissue was recognized; only a reticular network remained. There were large amounts of bile pigment scattered throughout the remaining liver tissue cells.

Examination of the kidneys revealed the vessels to show marked congestion. The glomeruli showed some swelling and often completely filled the glomerular spaces. The major findings were limited to the lining tubular cells of both the proximal and convoluted tubules. These cells appeared frayed, showed marked swelling and granularity, and many of the nuclei of the tubular cells were completely lost. A few tubules showed nothing more than fragments of nuclei. Many of the tubules contained hyalin and epithelial cell casts. A large number of the tubular cells showed infiltration with bile pigment, and bile casts were often noted in the lumen of the tubules.

Examination of the bone marrow, with sections taken from the sternum, ribs and lower right leg, showed a grade three cellularity on the basis of one to four grading. There was a normal myeloid-erythroid ratio. The cells showed all stages of development and appeared in normal proportions. Sections from the soft tissues of the injured leg at the site of fracture revealed evidence of fibrosis and a cellular infiltrate of lymphocytes. Sections from the injured ankle joint showed no evidence of osteomyelitis, and a good union of the fractured parts was observed.

The final anatomical diagnoses were: (1) acute diffuse necrosis of the liver, probably secondary to chloramphenicol intoxication, (2) severe jaundice of all body viscera and tissues, (3) cholemic nephrosis, (4) traumatic fracture of right ankle, healed, (5) chronic inflammation of skin and dermal appendages in the region of the fracture of the right ankle.

Drug Therapy.—On the first hospital admission, the patient received 600,000 units of penicillin daily for four days. She received 250 mg. of aureomycin daily for forty-six days. She received chloromycetin, 250 mg., four times daily for two days. Following the discontinuance of aureomycin, terramycin was instituted, 250 mg., four times a day for seventeen days. The patient was then discharged home without medication for thirty-five days. After thirty-five days, gantrisin, grains 7½, four times a day, was administered for six days. No medication was administered thereafter for an interval of five days, whereupon, chloromycetin, 250 mg., four times a day, was prescribed. The patient continued to take chloromycetin, 250 mg., four times a day until her final admission to the hospital in October, 1953. A total of 218 capsules had been prescribed. No other medications were administered during this time.

Discussion

Since chloramphenicol was the only drug given the patient the last fifty-odd days of her life, and since there was no known exposure to other potential hepatotoxic agents, we assume a direct relationship between the drug and hepatocellular destruction. Although the patient had received other antibiotics during her course of hospitalization, she showed no evidence of illness and there was an interval of thirty-five days after leaving the hospital, at which time, no medicine or antibiotics were ingested.

In 1933, Madison and Squier[5] pointed out the danger of bone marrow depression following the use of drugs containing a nitrobenzene component. This danger was further emphasized in 1934 by Kracke and Parker.[3] Smith et al[10] in 1948 studied the toxicity of chloramphenicol in dogs. They demonstrated the production of a moderate anemia in dogs given the drug intramuscularly. No change in white blood cell counts, differential counts or other toxic manifestations were demonstrated. Smadel,[9] in 1949, suggested that the presence of the nitrobenzene radical in chloramphenicol would lead to the suspicion that the drug might be toxic to the hemapoietic system. His clinical studies up to this time, showed no such manifestation, nor did they show evidence of kidney or liver damage resulting from the use of the drug. It was not until April of 1950, that Volini[11] reported hematopoietic changes in humans following chloramphenicol therapy. The first fatal case[7] of aplastic anemia following chloramphenicol therapy was reported

in December of 1950, and it was not until January of 1952, that the second fatal case[4] was reported. During 1952 and 1953, a considerable number of cases were reported and, at the present time, there is little doubt that the drug may, in occasional instances, demonstrate a toxic effect upon the hemapoietic system.

This effect need not be limited to the bone marrow. Liver damage may be an early manifestation of an idiosyncrasy to chloramphenicol. It is interesting to speculate as to whether this patient may not have later shown evidence of bone marrow damage, had not the liver destruction been fatal. The speculation that liver damage may show its appearance before other evidences of toxicity is borne out by other following reports from the literature. Hargreaves et al[1] in 1952 reported a case with jaundice occurring ten days after the beginning of chloramphenicol therapy. This patient showed no evidence of hematological disorder during the period of his jaundice (three days). He died two and a half months later of aplastic anemia, and at autopsy his liver was normal. These authors reported three other cases of aplastic anemia following chloramphenicol therapy with transient elevations in the serum bilirubin during the course of their disease. Clinical jaundice was not reported in these cases. Hawkins and Lederer[2] in 1952 reported on two children in whom jaundice developed thirty-nine and forty-nine days following the start of chloramphenicol therapy. Purpuric manifestations were noted eighty-six and 120 days after the start of the drug and death from aplastic anemia occurred 135 and 154 days after the onset of therapy. Autopsy findings showed no gross evidence of hepatic damage but microscopic examinations of liver sections showed infiltration of the portal triangles with lymphocytes and plasma cells. Wolman[12] in 1952 reported a case of jaundice of two days' duration occurring in a child approximately five weeks after chloramphenicol therapy. The child died one month after the episode of jaundice and autopsy showed fatty degeneration of liver cells and some periportal round cells infiltration. It is interesting to note that evidence of hepatic damage in these cases occurred before any sign of hematological disorder.

In 1952, Rheingold and Spurling[6] noted jaundice developing terminally in a patient with aplastic anemia following chloramphenicol therapy. Some evidence of liver necrosis was observed at autopsy. Rich, Ritterhoff and Hoffman,[7] in reporting their case of fatal aplastic anemia, noted marked necrosis throughout the liver. The fact that jaundice was not observed in this case may have been due to the fact that the liver necrosis occurred terminally, and sufficient time had not elapsed for jaundice to become clinically evident.

Salm's[8] case of acute liver necrosis occurred in a five-year-old boy who developed jaundice seven weeks after chloramphenicol administration. The patient died two weeks later. At autopsy, virtually complete liver necrosis was found. No hematological or bone marrow studies were available.

Summary and Conclusions

A case report of fatal acute yellow atrophy of the liver associated with chloramphenicol therapy has been reported. No evidence of hematopoietic damage was observed in this patient. The history of idiosyncrasy to drugs containing a nitrobenzene radical is briefly reviewed, as is the history of occasional hematopoietic damage resulting from the administration of chloramphenicol. Ten case reports from the literature are briefly reviewed in which liver damage secondary to chloramphenicol idiosyncrasy is postulated. The evidence of damage to the liver varied from a transient serum bilirubin elevation to massive necrosis of hepatic tissue. It is suggested that such a reaction need not be limited to one system. Damage may occur during the course of a toxic reaction which is manifested mainly as hematopoietic damage or it may occur as the only manifestation of chloramphenicol idiosyncrasy. This case is reported with the hope that all patients using chloramphenicol be closely observed for possible hepatotoxicity.

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St. Luke's Hospital Clinico-Pathological Conference

Edited by
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THE patient was a white man, seventy-three years old, who was well until approximately one year before entering the hospital. At that time, he fell a distance of two feet, landing heavily on his back on a concrete surface. He subsequently experienced severe and persistent back pain, so that for the ensuing three months he was unable to return to his work as an insurance agent. Work was then resumed on a part-time basis. The patient stated that he had not been well during the past year but did not describe specific complaints. During the past year there had been no anorexia, constipation, melena or loss of weight.

On the day before admission, the patient did not feel well and retired at 7:00 p.m. About three hours later, he developed a penetrating dull pain on both sides of the lower abdomen. He was restless, did not sleep well, and during the night had three bowel movements. In the early hours of the morning, he got out of bed, fell, and was so weak as to require assistance in returning to bed. Nausea developed but vomiting did not occur. His physician was called and examination revealed a state of shock. The patient was then admitted to St. Luke's Hospital.

Physical examination revealed a well-nourished, white man who was pale and apprehensive. The skin was cool and moist. There was cyanosis of the hands and feet. The pulse was 100, respirations 30, temperature 100 degrees (F.), and systolic blood pressure 60 mm. Hg. The diastolic component was not heard. The head and neck were not remarkable. The breath sounds were normal and the heart sounds were not audible. The abdomen was flat and the upper portion was soft. There were no scars or hernias. The liver border was 5 cm. below the right costal margin and the spleen was not palpated. The lower abdomen was moderately tender, and there was diffuse resistance to palpation. A moderately large, poorly defined focus of marked tenderness and resistance was noted in the left lower quadrant. Bowel sounds were hypoactive. Rectal examination revealed no lesions, a small prostate, and soft brown stool. The external genitalia were not unusual. A weak pulse was palpated in the upper extremities. A pulse was not detectable in the lower extremities. The deep tendon reflexes were active and equal.

The urine was yellow, slightly turbid, acid, and of specific gravity 1.010. There was 2-plus proteinuria, and no reducing or ketone substances. The sediment revealed 5 leukocytes, 2 erythrocytes, and 2 finely granular casts per average high power field. Hematologic examination revealed 14.4 grams of hemoglobin per 100 cc. There were 4,400,000 erythrocytes and 17,600 leukocytes per cu. mm. Differential count of 100 cells revealed 74 segmented granulocytes, 10 band cells, and 16 lymphocytes. The non-protein nitrogen was 53 mg. per 100 cc. Chest x-ray revealed a cardiac configuration consistent with left ventricular prominence. The thoracic aorta displayed marked tortuosity and dilatation with focal calcification. X-rays of the abdomen revealed a faintly discernible oval shadow on the right side with slight calcification of the periphery. Distention of the small intestine or colon was not seen. Erosion of the vertebral bodies was not seen. The impression was marked diffuse dilatation and tortuosity of the thoracic and abdominal aorta.

The patient remained in a state of shock. On the second hospital day, he climbed over the guard rails and fell to the floor. After this, he complained of a sharp and severe non-radiating pain in the left chest. On the fourth hospital day, a large area of dark blue discoloration developed over the skin of the entire left flank and scrotum. Over the next few days, the state of shock receded, the blood pressure rose to 140/105 mm. Hg, and the patient was able to sit up on the side of the bed for five-minute periods. Bowel movements were productive of a soft, brown semi-liquid stool. The abdominal pain gradually became intense, respirations were labored, and death occurred on the tenth hospital day.

Discussion

Dr. H. M. Bishop.—Several of the clinical findings are suggestive of an intraperitoneal lesion. These include fever, leukocytosis, nausea, reduced bowel sounds, and localized pain and tenderness in the abdomen. These findings are suggestive of rupture of the liver or spleen, acute diverticulitis with abscess formation, or carcinoma of the colon with perforation and acute peritonitis. Rupture of the liver or spleen is usually preceded by trauma, and is often accompanied by pronounced anemia. In this patient, the hemoglobin was 14 grams per 100 cc. and the abrupt onset appears to have been spontaneous. In addition, acute chest pain and extensive subcutaneous hemorrhage are not typical of rupture of an intra-abdominal viscus. Diverticulitis with abscess formation is ordinarily not accompanied by profound shock of this long duration. Carcinoma of the colon is often preceded by a history of digestive disturbance, and there are loss of weight, obstruction of the colon, hyperactive bowel sounds, and microscopic or gross bleeding from the rectum. With perforation and acute peritonitis, high fever, abdominal distention, and an exceedingly tender abdomen with diffuse rigidity are expected. These signs are not mentioned in this record, and I shall dismiss these diagnoses.

As I review this case, it seems to me that the important clinical features indicate that the lesion is not within the peritoneal sac. In my interpretation, the combination of important findings includes a seventy-three-year-old man with abdominal pain of sudden onset accompanied by profound shock, radiographic evidence of advanced arteriosclerosis of the abdominal aorta, a large subcutaneous ecchymosis of the flank, and absent arterial pulsations in the lower extremities. These findings strongly suggest a lesion of the vascular system in the retroperitoneal region. The x-ray of the abdomen showing dilatation of the aorta with calcification makes this structure the probable site of the morphologic change and tends to preclude uncommon lesions of smaller arteries. Thus, I am not led to consider aneurysm, rupture, or thrombosis of the superior mesenteric or renal arteries. Such conditions are often caused by emboli, and these usually come fom the heart valves. In this case, there are no murmurs to suggest valvular disease, no evidence of heart failure, and no history to

indicate bacterial endocarditis of the mitral or aortic valves. Saddle embolus at the aortic bifurcation is suggested by the absent pulsations in the lower extremities. However, this is ordinarily not accompanied by pain and

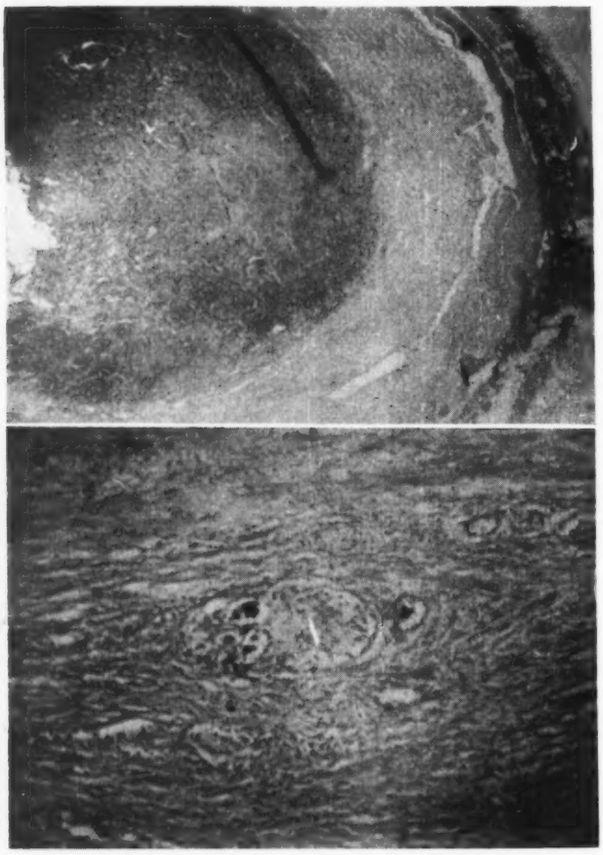

Fig. 1. Recent thrombus, circumflex branch of left coronary artery.

Fig. 2. Metastatic carcinoma of prostate gland in perineural lymph space.

rigidity of the abdomen, or by bleeding into the subcutaneous tissues of the flank. There remains saccular aneurysm of the abdominal aorta with rupture and extensive retroperitoneal hemorrhage. You will note that the patient fell from bed on the second hospital day, and that the ecchymosis was first noted on the fourth hospital day. I think it very likely that the massive hemorrhage occurred at the time of or shortly after this fall, and that an erythrocyte count after the second hospital day would have shown a pronounced anemia. The count we have, with 4,400,000 erythrocytes, was taken on the day of admission which was probably before the massive hemorrhage occurred. Now, there is one thing that puzzles me about the diagnosis of saccular aneurysm with rupture. That is the acute chest pain that the patient complained of on the second hospital day. We know that in dissecting aneurysm, the dissection may proceed from the thoracic aorta distalward, or in the reverse direction in a retograde manner. A diagnosis of dissecting aortic aneurysm with retrograde dissection into the thoracic portion, and rupture of the abdominal portion with massive retroperitoneal hemorrhage would bring all of these important clinical features under one explanation and one pathologic process. Therefore, my diagnosis is dissecting aneurysm of the aorta with rupture and retroperitoneal hemorrhage.

Dr. F. E. Luger.—Is it not possible that the chest pain indicates some lesion unrelated to the aortic aneurysm? I am thinking of coronary thrombosis and myocardial infarction.

Dr. H. M. Bishop.—I think this is a distinct possibility.

Dr. Bishop's Diagnosis

Dissecting aneurysm of the aorta with rupture and retroperitoneal hemorrhage.

Anatomic Diagnosis

Saccular aneurysm of abdominal aorta with rupture and retroperitoneal hemorrhage.

Recent thrombus, circumflex branch of left coronary artery.

Adenocarcinoma of prostate.

Dr. J. C. Smith.—Autopsy examination revealed advanced arteriosclerosis of the aorta with dilatation and calcification. A small saccular aneurysm was present in the upper abdominal portion and a large saccular aneurysm was present in the lower abdominal portion between the renal arteries and iliac bifurcation. Rupture of the larger aneurysm was evident from the massive recent retroperitoneal hemorrhage that extended from the diaphragmatic insertion into the pelvis. Both common iliac arteries revealed saccular aneurysms of arteriosclerotic type, and all were nearly filled with thrombi, blood clot, and atheromatous debris. The heart weighed 520 grams, and the circumflex branch of the left coronary artery revealed a canalized thrombus. Just proximal to this, the lumen was occluded by a recent thrombus (Fig. 1). An infarct of the myocardium was not identified. The kidneys revealed arteriolar nephrosclerosis. The prostate gland disclosed a small partially differentiated adenocarcinoma of the left posterior lobe. Extension of tumor cells to the perineural spaces of the posterior capsule was demonstrated (Fig. 2).

Davis, Parlante, and Halsted[1] reported on cases of coronary thrombosis that they believed to result from shock. Between the years 1942 to 1949 at the Los Angeles County Hospital, there were 3,365 case records with a diagnosis of coronary thrombosis. During this time, there were forty cases associated with antecedent shock. The diagnosis was confirmed by autopsy examination in eighteen. In these cases, the causes of shock included surgical operation in six, arsenic or barbiturate poisoning in four, spinal anesthesia in three, postoperative peritonitis in two, and burns, accidental trauma, and insulin coma, one each. The patients were between the ages of forty-five and eighty years. Fourteen were men and four were women. The authors emphasized that coronary occlusion resulting from shock is not often accompanied by pain over the precordium. They found no infarct of the myocardium when the shock was of less than twelve hours duration.

The adenocarcinoma of the prostate may have been the cause of the prolonged low back pain because of extension to the adjacent perineural lymph spaces. Distant metastases were not found. Moore[2] has found that such occult or latent carcinomas of the prostate occur in approximately 20 per cent of men past the age of fifty years.

References

1. Davis, H. A.; Parlante, V. J., and Halsted, A. M.: Coronary thrombosis and insufficiency resulting from shock, a clinical and pathologic study. Arch. Surg., 62:698, 1951.
2. Moore, R. A.: Incidence of occult adenocarcinoma of the prostate. Arch. Path., 32:787, 1941.

Detroit Physiological Society

Meeting of November 18, 1954

PELVIS TENSILE STRENGTH

By F. Gaynor Evans, *Department of Anatomy*, and Herbert R. Lissner, *Department of Engineering Mechanics, Wayne University.*

Tensile strain distribution in the pelvis, produced by dynamic loading of the ischial tuberosities, was studied by means of the "stresscoat" technique. Twenty-two intact pelves removed from the body and eight within the body were tested. The free pelves were tested with 39 to 112 inch pounds of energy while those within the body had 200 to 450 inch pounds of energy applied to them. During the tests the pelvis behaved like an elastic body, the different strain patterns arising from (1) lateral or medial rotation of the iliac crest, (2) lateral displacement of the acetabula, (3) lateral or medial rotations of the ischial tuberosities, or (4) various combinations of these movements. Rotations of the iliac crests produced anteroposterior tensile strain in the iliac fossae or the lateral aspect of the iliac alae, depending on the direction of rotation. Lateral displacement of the acetabula caused tensile strain within them as well as in the long axis of the iliopubic rami. Rotations of the ischial tuberosities caused tensile strain in the long axis of the ischiopubic rami. The aspect of the rami involved depended on the direction of the rotation. The tensile strain pattern in the iliopubic rami indicated that the rami functioned as a tension bar. The soft tissue underlying the ischial tuberosities is an excellent energy absorbing material. Fractures produced by static and dynamic loading of the pelvis were similar to those seen clinically and arose from failure of the bone because of the tensile stresses within it.

This investigation was supported by a Research Contract with the Aero Medical Laboratory, USAF, and (in part) by Research Grant A-377 (C4) from the National Institutes of Health, USPH.

HAND-SCHULLER-CHRISTIAN SYNDROME (Xanthomatosis: Eosinophilic Granuloma)

By Brenton M. Hamil, M.D., *Edsel B. Ford Institute for Medical Research, Henry Ford Hospital, Detroit, Michigan.*

The syndrome commonly referred to as Hand-Schuller-Christian disease encompasses one group of pathologic conditions in children with essential changes in the reticulo-endothelial system and characteristic deposition of cholesterol and its esters in these cells in the tissues involved, leading to the classical description of so-called "foam cells" by which this condition is recognized pathologically. Trauma, either from injury or infection, has seemed to play a part in the initiation of the manifestation of the pathologic process. Whether the lipoid deposition has been due to an avidity of the cells for the lipoid substance or is a compensatory mechanism resulting from failure of proper fat metabolism and therefore an increase in the amount available to the cells, seems to have been the basis of most disputes. Some pathologists still adhere to the original opinion expressed by Virchow that the lesion represents a neoplasm. Others insist that the pathologic process and changes incident thereto are the same as that described resulting from chronic infection and labeled eosinophilic granuloma.

Rowland and others have considered that there is a constitutional anomaly of lipoid metabolism and therefore classified this disease along with other so-called "storage diseases" recognized as being due to disturbances in lipoid metabolism.

The Hand-Schuller-Christian Syndrome is characterized clinically by the triad of lipoid defects of membranous bones: diabetes insipidis; exophthalmos; and also in some cases gingivitis and stomatitis and adiposogenital dystrophy.

We should also include under this same classification the disputed clinical condition now called Letterer-Siwe disease and probably also eosinophilic granuloma.

The clinical course of a patient from age eighteen months with all of the manifestations of this syndrome apeparing at some time was presented with serial slides of x-rays and an outline of diagnostic measures and treatment through the age of eight and one-half years of normal development.

During this last summer she has shown premature development of the breast, but careful clinical and diagnostic appraisal shows this to be a part of premature pubertal development which is characteristic of her family heritage. Urinary gonadotropin assay results were presented.

The clinical symptomatology of the Hand-Schuller-Christian Syndrome is readily seen to be in all instances the result of the development of reticuloendothelial tumor masses at various sites.

The problem remains to be proved why the reticuloendothelial tissues under the stimulus of trauma or infection use lipoid substances in this neoplastic destructive manner.

Meeting of December 16, 1954

STUDIES ON PELVIC DEFORMATION AND FRACTURES

By Robert I. McClaughry, *Wayne University*

Prothrombin solutions stored in the frozen state form a derivative of prothrombin; simultaneously an accelerator of prothrombin conversion appears. Serum contains a prothrombin conversion accelerator which is similar to prothrombin in many ways. It was the purpose of these studies to determine whether or not this accelerator is associated with the existence of a prothrombin derivative.

Bovine serum in which prothrombin was not detectable was used as the starting material in Seegers' method for prothrombin purification. About one fifth as much protein was obtained as with plasma. Under two-stage analysis, 6.5 per cent of the serum protein was prothrombin.

A derivative of prothrombin was demonstrated in the serum protein by conversion to thrombin. When dissolved in 25 per cent sodium citrate solution, roughly 30 per cent of the protein was converted to thrombin. Thus, approximately one quarter of the serum protein is not detectable as prothrombin, but will form thrombin under suitable conditions.

The serum protein was also an accelerator of prothrombin conversion. The mechanism of this action is like that of stored prothrombin or serum accelerator; it is unlike ac-globulin, thromboplastin, or the platelet-plasma thromboplastin-like activity.

The serum protein by electrophoretic analysis contained only components of the same mobility as those found in purified prothrombin. The component thought to be a derivative of prothrombin was greatly increased.

These studies again demonstrate the coincidence of occurrence of a prothrombin derivative and an accelerator of prothrombin conversion. Here the two activities are associated with proteins isolated from serum. The possibility that the accelerator is derived from prothrombin, while not conclusively demonstrated, seems to merit consideration.

INFLUENCE OF BRAIN STEM ACTIVATION ON SENSORY MESSAGES

By F. A. Morin and J. D. Green, *Departments of Anatomy, Wayne University College of Medicine, Detroit, and University of California, Los Angeles.*

In recent years, evidence has been presented by neurosurgeons (Penfield et al) and neurophysiologists (Moruzzi and Magoun, Magoun et al) that the brain stem reticular formation is the site of integrative functions of the highest level. The mechanisms of arousal, and wakefulness, depend on the integrity of the brain stem reticular formation. Our purpose was to study how sensory messages reaching the cerebral cortex were modified by simultaneous activation of the midbrain reticular formation. Cortical potentials were elicited in cats by stimulating peripheral structures (skin, peripheral nerves, cochlea) and recorded oscillographically. The results so far obtained indicate that during reticular stimulation the evoked potential's amplitude diminishes considerably. The positivity of the potentials was often less affected than the negativity, thus suggesting an effect even on efferent cortical discharges. These effects are more prominent at higher frequencies of peripheral (tactile) stimulation and on cortical areas ipsilateral to the stimulated side. Cutaneous impulses in the medial lemniscus do not appear to be affected to the same extent. These results suggest that the midbrain reticular formation can inhibit sensory messages, probably through diencephalic relays. Such inhibitory effect is parallel with desynchronization of cortical rhythms during wakefulness and attention. These phenomena may, therefore, represent the physiological correlates of that state of consciousness during which external stimuli are attenuated, such as in deep concentration.

PERIODIC HEALTH APPRAISAL—EYES

(Continued from Page 473)

macula, the subject is directed to look at the light in the ophthalmoscope. Both the central and peripheral retina are examined searching for the presence of areas of inflammation, loss of transparency, hemorrhages, exudates, pigment deposits, tumors, and retinal detachment.

The physician, during his routine physical examination, can and should play an exceedingly important role in discovering the presence of unsuspected ocular pathology. In so doing he can contribute immeasurably toward the prevention of blindness.

References

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2. Roper, K. L.: Modern approach to glaucoma. Merck Rep., 64:10 (Jan.) 1955.
3. Schoenberg, M. J.: A report on the progress of the glaucoma campaign during the past three years. New York State J. Med., 45:738, 1945.

Making Friends for Medicine

We have stressed, this year, a program of indoctrination of our membership. This has been coupled with meetings, at the county level, on developing and expanding better public relations.

The high level of scientific medicine, practiced and available to the American public, has not been under adverse comment by the people of our country and certainly not in Michigan. The health records of our nation stand close scrutiny and reflect only the constant scientific progress of our profession.

What then has brought about the flood of comment in the lay media of public information on Health and Medical Practice, too often in a highly critical vein?

Perhaps it has been the very spectacular development of new methods of diagnosis and treatment, or has it been the fact that the cost of medical care is still not classified in the public mind into its parts: (1) medical service, (2) hospital care, and (3) laboratory and drug costs? In any event, practicing doctors of medicine must continue to assume the responsibility of explaining and clarifying these matters in the public mind.

There are also other means of winning and retaining friends for medicine. The State Society, through its manual, suggests at least twenty-six projects for the consideration and action of County Medical Societies by which they may increase their service to medicine and to the public.

It has been my privilege to attend many of the meetings of committees of county societies, who have been discussing and planning concerted action in extending their public relations. The spirit and enthusiasm displayed was most heartening. It cannot be denied that the best relations begin in the doctor's office. From here, wider activity must become a product of joint activity. Even the smallest societies can play a part, but the determination and enthusiasm of a committee should be disseminated widely to all the members. Only then may we expect a fully indoctrinated membership.

Let it no longer be said that organized medicine "takes only a negative stand against change" but has a positive program which will surely win friends for medicine.

Robert H. Baker

President, Michigan State Medical Society

President's

Message

Editorial

THE EISENHOWER PLAN

WE have read the proposed plan for the Nation's Health, S.886. It is very ambitious, over 127 pages, and contains much which the medical profession is and can whole-heartedly support. The first 55 pages are devoted to "reinsurance." We are satisfied the President has been sold a bill of goods with a high sounding name. What is proposed is not reinsurance but a method of subsidizing certain proposals of insuring groups and categories not actually insurable. They cannot pay their costs, and hence cannot be insured or reinsured, but they can be made beneficiaries by a hidden subsidy.

Mortgage Insurance

The language is intricate, the thought much befogged, and we seem to find much which resembles the Kaiser plan of medical service. In the old days, the AMA had a provision in its code of ethics prohibiting "contract practice," but that is hinted in many of the provisions. We fear the old Truman socialized medicine bureaucrats who are still under Civil Service, are sufficiently near the top rank to have colored the program, and at least smoke-screened the President's advisors.

A provision is made to aid in the teaching of more nurses, and graduate training of professional nurses and public health personnel, increased public health service and mental health. We have suggested before, and do so again, that a simple bill be passed by the Congress disclaiming the control granted by subsidies according to the Supreme Court. By such act on the part of Congress a way might be opened for much needed aid to the struggling medical schools. Now they do not dare even hope for desperately needed capital investments for modernization and expansion.

MUSKEGON-LeFEVRE PLAN

THE older members of the Michigan State Medical Society were quite familiar with the founding, objectives and motivation of the Michigan Foundation for Medical and Health Education, Inc. The vision was a great fund with large donations and the ambition of being full grown at once, so benefits could be made immediately available. Many generous donations were made but the vast majority of members could not be included because of more modest finances, and many other demands on their generosity.

During recent years no special effort has been made to augment the fund but many calls for help are now coming to the Foundation. During the years of GI Bill activity, most medical students were getting some GI assistance, but that source of help to medical and other students is rapidly terminating.

The Fund has some $11,000 of income from investments which are on loan to medical students. Some are due to begin repaying. Many calls are coming in since GI aid is past and many donations are needed.

Wm. M. LeFevre, M.D., Councilor of the Eleventh District of the Michigan State Medical Society, has made a suggestion which we believe could easily be followed by most of our members. We reprint herewith his letter in the *Muskegon County Medical Society Bulletin*. We commend it to every member who can establish a new habit and in so doing perform a good deed:

COUNCILOR'S LETTER

The Michigan Foundation for Medical and Health Education, Inc., functions under the guidance of the Michigan State Medical Society and is one of its very important public relations activities. This organization was incorporated some ten years ago and very actively solicited funds for its endowment account during its first few years of existence. Whereas considerable publicity has been given it in recent years, it has not attracted much attention, and I am sure many of the younger members of the county and state societies do not realize its importance and purpose. Activities of such an altruistic nature deserve much more attention than has been accorded this one.

The corporation has and is receiving subscriptions from physicians and laymen throughout the state. These funds are invested in stable securities and the earned interest is expended in health and medical educational projects. The primary object of the corporation is to improve the quality and increase the quantity of medical care in Michigan.

The costs of the Michigan Rural Health Conference have been underwritten by the foundation each year. Additional funds have been allocated to a student aid

revolving fund. Under this plan, loans are made to junior and senior medical students who have found themselves financially unable to carry on their education. These students accept the loans with the provisions that they practice three years in a rural community after completing their education, and that they repay the loan starting one year after starting pactice. No interest is charged until after that time.

Some of the early contributions to the foundation were direct gifts to the student aid revolving fund, making it possible to start loans to students before that fund was built up from earned interest. So some $11,000 is still present in that fund represented by notes from recipients of loans.

Up to the present time a total of seven students have been helped. One of these students has now progressed to the stage of repayment of the loan and will start this procedure presently. The other six are still in the process of their education.

The invested funds of the corporation amount to $113,000.00 and the interest earned amounted to about $3,300.00 last year. From this account students have received variable amounts according to their needs. Several other requests for help have been received from students but they had to be refused because of a lack of available funds. More students could be helped if the capital account could be increased.

Many rural communities in Michigan are without adequate medical care and can be helped by such activities as the Foundation for Medical and Health Education. Helping such communities is very definitely embodied in the oath of Hypocrates.

The foundation has repeatedly requested help from the profession in Michigan as well as from laymen, but it would be very good if we could say that the profession alone was back of it and was supporting this worthwhile project.

The donation of five or ten dollars from each of us once a year would add many thousands of dollars to the capital fund and make it possible for several other deserving men and women to receive a medical education and serve a needy community in Michigan.

A copy of this editorial, with my check for $10.00 is being sent to Dr. E. I. Carr, President, Michigan Foundation for Medical and Health Education, 300 West Ottawa Street, Lansing, Michigan. I intend to repeat that check on each of my birthdays. Why don't you do likewise, and enjoy with me the pleasure of having helped in a small way some deserving student of medicine.

WM. M. LEFEVRE, M.D.
Councilor, Eleventh District

JONAS E. SALK, M.D.

A NEW name has been added to the medical immortals. The accomplishments, development of a satisfactory vaccine to control poliomyelitis, was conclusively and dramatically proven. Never before in the history of medicine or any other science, so far as we know, has such a stupendous experiment been carried out. Never before has the announcement of results been more dramatic. Dr. Salk had proven his work to his own conscience, and had been sponsored with unlimited funds by the National Foundation for Infantile Paralysis.

He knew his results by trial with about 5,000 children in the Pittsburgh area. We all know of the massive experimentation done last year, 1,829,916 children becoming part of the final and conclusive study. Thomas Francis, Jr., M.D., of the University of Michigan, who made the evaluation study, with over fifteen million punch cards, on April 12, 1955, before an invited audience of about 500 of the nation's and the world's great medical men and men of science declared:

"The vaccine works. It is safe, effective, and potent. . . . The vaccine has produced an extremely successful effect among bulbar patients in the areas where vaccine and inert substances had been tried interchangeably. . . . There can be no doubt now that children can be inoculated successfully against polio."

The report was contained in a 113-page booklet and a nine-page typewritten final release with the above quotation. Many spoke—scientists and administrators from every field of research in the medical sciences. The manufacture of the vaccine was authorized by the federal department; also its use and sale.

Dr. Salk, in his remarks, states that he has already improved the vaccine and its method of use:

"Only two inoculations of the Salk polio vaccine, spaced two to four weeks apart, should be given is 1955 instead of three inoculations over a five-week period, as was done in the 1954 field trials. The third inoculation, or booster shot, should not be given before at least seven months have elapsed, but certainly before the onset of the 1956 polio season. The maximum effect of the booster inoculation can be achieved only if it is administered at least seven months beyond primary inoculation. This should provide immunity at least into 1956, and the booster should extend that immunity for an indefinite period, perhaps years."

MEDICAL PRACTICE LAWS

WILLIAM A. KOPPRASCH, M.D., of Allegan, on January 21 entered suit against the Board of Trustees of the Allegan Health Center, members of the medical staff by name, the Allegan County Medical Society, the Michigan Hospital Association, and the Michigan State Medical Society for interfering with his practice of medicine, stating that they do not allow him to take patients in the Allegan hospital, will not accept him on the staff or in the medical society, and have

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Arthur C. Curtis, M.D.

Portrait of a Professional Perfectionist

"As a youngster, it seems that I was always a stranger in somebody else's house," said Dr. Arthur C. ("Whitey") Curtis.

Perhaps more than anything else this explains how Dr. Curtis, one of the nation's outstanding dermatologists, can be one of the most endearing and thoughtful people at the University's Medical Center, at the same time one of the most exacting and professionally disciplined.

The son of an itinerant minister, "Whitey" traveled everywhere and worked at everything. In this somewhat harsh yet liberalizing milieux, the boy soon developed a repertoire of places and faces which fortified him when he became a student "on his own."

In and out of other people's homes, in and out of one job after another, a cool head and a keen sense of personal responsibility were inevitable. It was also inevitable that others turned to this young man for advice and help; he had been around.

It was also inevitable that a sense of self-perfection developed, that an intensity to prove himself emerged. Even today when his closest friends see him as somewhat mellowed, the same intensity prevails. It is an inward spirit; outwardly he still maintains an atmosphere of inspiring confidence.

Take his golf as an example.

Back in the days when "Whitey" contemplated changing from internal medicine to dermatology and syphilology, he was an accomplished golfer. But when the medical transition took place, golf got lost in the shuffle. He gave it up entirely.

"I had other things to do," was his explanation. Other things indeed! He began an intensive study at the New York Skin and Cancer Hospital, the University of Buffalo, and the Mayo Clinic.

But now, having accomplished a remarkable task, he has returned to golf. He says, "Today, I am playing golf again. In fact, I am back where I was twelve years ago: I am mad at my game!"

There can be no doubt that the early years made "Whitey" Curtis the kind of man he is today: amiable yet reserved, understanding yet determined, fun-loving yet self-disciplined.

Actually any lunch box biography of "Whitey" Curtis contains two basic food stuffs. There are two Curtis's: the Elder and the Younger. It is difficult to tell them apart.

The Elder Curtis was a minister; the Younger Curtis, the minister's son. The Reverend Mr. Curtis had a sufficient store of realism and natural wisdom to influence both his parish and his family. A classicist, a professor of languages, a leader in the ecumenical movement, the Elder Curtis obviously ignited the imagination of the Younger Curtis at every turn of their mission.

"My father once told me, 'Son, you must see religion and you must see it in its various phases.'" That's exactly what "Whitey" did; he went on a veritable pilgrimage to his friends' churches until he found one that suited his needs.

"My father believed in a single Protestant church, but he was never a fanatic," Dr. Curtis declared. Today the Younger Curtis displays the same mission intellectually. He is an intense, critical, and creative teacher, as well as an imaginative organizer of research. He has his history in tow; he recalls his courses in philosophy as though they happened yesterday; and he approaches the customs and mores of people with the avidness of a trained sociologist.

His friends chorus the same theme: "Whitey" Curtis does everything with the intensity of an artist. Yet he maintains a slight touch of Socratic irony in his manner. For example, he has few or no "canned" speeches in his desk drawer; he works at each individual lecture, each speech as if it were to be the last. He drives and drives until one would think he might collapse at the first breath on the podium.

But the irony pokes through. "He is one of the easiest, clearest, smoothest talkers in public I know," said his good friend, Dr. Reed Nesbitt.

Dr. Curtis provides us with another insight into this aspect of his character. "Dad never stuck to the Book," said "Whitey." "He knew it so well, he didn't have to stick to it." This is often the case with well-disciplined minds; their command of fundamentals is so secure that they can make the turns and deviations which furnish life with originality and spark.

"My father would deliberately read Scripture in the original Greek, so he could start an argument with his Deacons," said Dr. Curtis.

"Dad took his sermons from life and from the lives of great people. He would talk about Abe Lincoln, or Hegel, or some other dramatic figure. And the parishioners loved it," said "Whitey."

The Elder and the Younger walked hand in hand as long as they could. "Whitey" hit the academic road, but the Reverend continued to influence his son.

On one occasion, when the parishioners had gathered for a picnic, soda pop had been ordered for the minister and his family. Elder Curtis said to Younger (who incidentally was named after one of the pillars in the Congregational Church): "Drink up that soda pop, Son, so we can have some beer with the rest of the folks!"

Dr. Curtis recalls such incidents of his youth warmly, and he relates them fondly. "Why, my father was one of the best card players in the parish." Today Younger Curtis is considered one of the most enthusiastic poker players in the Medical Center.

One of his most precious possessions is his father's Phi Beta Kappa key, hung against velvet and encased in a small gold frame. "My wife gave it to me for a Father's Day present not long ago," said Dr. Curtis.

Another possession is a small wood figurine, resembling a curious artifact from some primitive society. "Dad carved that," said Dr. Curtis, "and it used to be on the family barn." The arms are half gone, the paint has worn off, and the crevices are deep with age. But the Younger Curtis had it mounted on a solid walnut stand so that it might be displayed in his hospital office.

No one should leave Dr. Curtis, now President of the American Academy of Dermatology and Syphilology, without documenting a bit more solidly his varied career. "As a kid, I worked everywhere and at everything," he said. "I had to, or I didn't eat."

"Everything" is almost an understatement: undertaker's helper, hash slinger, baby sitter (in Dr. Newberg's home), newspaper advertising man, librarian, paymaster, waiter, postmaster, and book salesman. "I've done them all," he said, "and I got through 'med' school!"

Perhaps it would be more fitting to list his professional accomplishments as a tribute to an outstanding medical teacher. The list is long and it is legion. Anyone needing such academic documentation would have no trouble finding honors, associations, and accomplishments. But the boyhood experiences, by contrast, represent the true triumph.

A final story, and the rest is a matter of remarkable record:

Dr. Harry Towsley tells of the time a fishing party, including Dr. Curtis, was caught a considerable distance off the shore of Lake Superior without a motor.

"The motor had clogged up with rust," said Towsley, "and it was 'Whitey's' job to get it unclogged before we all got smashed to bits by the hard waves and the approaching rocks."

Not once through the ordeal, related Towsley, did he recall Dr. Curtis looking anxiously in the direction of the rocks. "He just worked hell out of that motor until he got it going."

"Whitey" Curtis keeps his eye, his mind, and his heart on his job until it is done. When it's done, he goes off to another one, just as earnestly, just as doggedly.

If history could be reversed, the Elder Curtis might have found his son a pretty good subject for one of those sermons!

—Louis Graff

Michigan Foundation for Medical and Health Education, Inc.

President's Annual Message to the Membership

By Earl Ingram Carr, M.D.
Lansing, Michigan

EARL I. CARR, M.D.

This is the tenth annual meeting of the Michigan Foundation for Medical and Health Education, Inc. We are not ten full years old, however, because the organization meeting in 1945 was late in the year on September 19, and the first annual meeting was held January 17, 1946, four months later.

In the beginning, we set our sights high and not unreasonably high, but we have not yet attained them. Through these years the struggle has been sufficient to have attracted considerable attention so that inquiries are coming from national organizations, from other state societies, and from individuals in other states and Canada seeking the privilege of loan. We have been invited to be included in the standard reference work on Foundations entitled The American Foundations and Their Fields (7th edition).

Our Student Loan Fund having extended to approximately $11,000 in loans outstanding, $10,950 to be exact, has caused us to feel pinched for cash this year. In fact, for the first time, we have, at the moment, unprocessed applications for aid from upperclass medical students. We were also forced to delay attention to another important commitment, contrary to our heretofore punctual habits. No accounts payable remain today.

A year ago, this body disposed of a clamor from some directions for a professionally directed fund-raising campaign by resolution opposing such an effort "at this time." Your president and secretary, however, prepared a soliciting envelope and included it in the Secretary's Letter. Immediately following, $1380.00 came in, $1,000 of it from a pledge at organization time and $100 from a repeated contributor. The balance of $280 came in small amounts, surely as a result of the effort. It is fair to admit that the envelopes cost us $88.00 plus. Great satisfaction comes to this writer, though, because the $280.00 of contributions was made by eighteen individuals who may be giving for the first time and now have experienced participation in the Foundation. You have heard this speaker plead before for contributions of any size from many givers. The greater the number who give, the stronger the Foundation!

We do not yet know the cost of the eighth annual Rural Health Conference held January 20-21-22, at Kellogg Center, East Lansing, except that expenditures were held within the underwritten amount. We also know that this was the largest conference yet, in diversity of attendance, in programs and, we think, in enthusiasm. This year, the requested unusual theme was an approach to youth, with participation by youth. Phases of career-planning, child health, religion, education and recreation were handled by fifty-two speakers of renown. Again, we were the sponsors with more than 100 co-sponsors.

The Foundation sponsored the lecture by Dr. Albert B. Sabin on "Vaccination for Poliomyelitis" at the 1954 Michigan Clinical Institute and the Andrew P. Biddle lecture by Dr. Charles W. Mayo on "United Nations: Our Hope for the Future" at the annual meeting of the Michigan State Medical Society.

The total resources of the Foundation advanced in 1954 by $2,277.27 to a total of $113,185.65.

Two activities are requested of you and of all doctors of Michigan:

1. Cultivate benefactors for the Foundation.
2. Influence all doctors to send a check of any size as often as possible.

January 27, 1955.

Annual Report of the Secretary

By Wm. J. Burns, LL.B.
Lansing, Michigan

The Secretary has executed the duties of his office according to the By-Laws and as provided in Robert's Rules of Order, pursuant to the instructions of the members of the Board of Trustees, with the continued advice and guidance of President Carr and of Treasurer Gardner, to whom the Secretary again expresses gratitude and appreciation.

A letter was sent on October 14, 1954, to the Treasurer of the Woman's Auxiliary to the Michigan State Medical Society concerning the interest account on the $1,000 Savings Bond (Series G 2½%) maturing September 1, 1955, which was assigned to the Foundation. No reply or interest has been received from the Woman's Auxiliary since that date. Another statement will be sent covering the interest to maturity of the bond (next September 1).

The Michigan Foundation for Medical and Health Education Lecture, to be given on the occasion of the 1955 Michigan Clinical Institute (with the speaker's expenses to be paid out of the Biddle Fund of the Foundation) will be presented on March 9, 1955, by Alexander Brunschwig, M.D., New York City, who will speak on "The Surgical Treatment of Cancer of the Cervix that has Recurred after Radiation Therapy."

The Biddle Lecture, given on the occasion of the 1954 Michigan State Medical Society Annual Session (with the speaker's expenses paid out of the Biddle Fund of the Foundation), was presented in Detroit on September 29 by Charles W. Mayo, M.D., Rochester, Minnesota. Dr. Mayo's subject was "The United Nations: Our Hope for the Future."

The Student Loan Fund has been utilized to aid the medical education of the following medical students:

Name	*University*	*Total Amount*
L. Edmond Eary, Jr.	University of Michigan	$1,600
Benjamin F. Koepke	Wayne University	$2,000
Donald P. Jackson	Wayne University	$2,500
Robert E. Pearson	Wayne University	$1,500
John C. Shelton	University of Michigan	$ 950
Robert O. Webster	University of Michigan	$1,600
Russell F. Smith	University of Michigan	$ 500

Robert E. Pearson, who began practice in Boyne City in August, 1954, has been written urging that he begin reimbursements to the Revolving Fund in order that additional medical applications may be served by the Fund.

Recommendation to Board of Trustees

It is recommended that the Board of Trustees again adopt the following resolution:

"That all acts and commitments consummated by the Committee of the Whole and the Officers during the past year be ratified by the Board of Trustees."
January 27, 1955.

CANCER OF THE CERVIX

(Continued from Page 462)

the problem becomes a surgical one, and providing there is no spread beyond the pelvis, an appropriate operation should be advised. The reason for this is that there is evidence that proper radical surgery carried out under these conditions may still afford the patient a chance for five-year cure. In a series of seventy-five such patients, radical surgery afforded a five-year over-all survival in 30 per cent of the series. Where the recurrence fortuitously occurred in or around the cervix, the salvage was eleven of eighteen patients, or 60 per cent of the series; and in this group exenterations were not necessary.

References

1. Brunschwig, A.: Am. J. Obst. & Gynec., 68:776-780, 1954.
2. Truelsen, F.: Cancer of the Cervix (monograph). Copenhagen: Rosenkilde and Bogger; London: H. K. Lewis and Co., Ltd., 1949.

Michigan's Department of Health

Albert E. Heustis, M.D., Commissioner

SALK VACCINE PLANS

Plans for use of the Salk vaccine in Michigan if and when it is licensed are receiving increasing attention both in the counties served by full-time local health departments and in the thirteen counties still without organized public health service.

Directors of the state's forty-seven full-time county, district and city health departments are working with their practicing physicians, school officials and interested community groups, to be ready to start at once on giving the three injections of vaccine to first and second grade children in all their public, private and parochial schools. In the 10 counties that participated in the field trials last spring, all boys and girls who were included in the program and were not given the vaccine will be given the injections this spring.

In the four full-time health departments that are at present headed by an acting director who is not a physician, a physician will be designated to be responsible for the vaccine injections.

In the thirteen so-called unorganized counties in the state, counties not yet served by full-time local health departments, the county board of supervisors is the official agency that will authorize acceptance of the program for their school children and be responsible for the designation of a physician and for setting up the machinery for carrying out the program. These counties are Berrien, Cass, Clinton, Gogebic, Gratiot, Huron, Ionia, Jackson, Lapeer, Livingston, Marquette, Montcalm and Tuscola.

ADDITIONAL MULTIPLE SCREENING PROJECTS

Two additional multiple screening surveys are now being planned by the Michigan Department of Health. The first will be held in Barry County from March 28 to April 5, in cooperation with the Barry County Health Department and the Barry County Medical Society. It is planned to screen 3,000 persons in various industries in Hastings and Barry County.

The second project will be conducted in Livingston County from April 25 to May 20. An estimated 3,000 persons will be screened in co-operation with the Livingston County Medical Society and the Livingston County Chapter of the Michigan Division of the American Cancer Society.

DRIVE FOR COMMISSIONING RESERVE GROUP

The Public Health Service is putting on a concerted drive for commissioning physicians, dentists, veterinarians, sanitary engineers and nurses as inactive commissioned officers. These persons would be a potential professional group so in case of a national or area emergency of great magnitude, they would be available.

It is the desire of the Service that emphasis be placed upon recruitment from other than the official health agency group. The purpose is to have a reserve group which could be placed on active duty to augment the official health agency group when needed. Such duty would be temporary.

Time spent in the United States Public Health Service as a physician can be used to satisfy the demands of Selective Service. The Public Health Service has the same pay schedule as the Army, Navy, and Air Force. A career in the Public Health Service has some features not present in other government services.

The Public Health Service and the Michigan Department of Health hope that you will be alert for possible recruits. Those interested should contact Harald M. Graning, M.D., Regional Medical Director, Department of Health, Education and Welfare, Region V, 69 West Washington, Chicago 2, Illinois.

BIRTHS EXCEED 190,000

Late reports of births have brought Michigan's provisional total for 1954 to 190,759, setting a new record for the state.

NEW RHEUMATIC FEVER FILM

Ten copies of the new motion picture, "Stop Rheumatic Fever," have been received by the Michigan Department of Health from the Public Health Service, together with supporting educational material. The film may be borrowed without charge from the Visual Education Unit of the department.

The department's film loan library now numbers 722 prints. Films are on a wide variety of subjects. They are all 16 mm and most of them are in color, available for loan to any interested groups, without charge except for return carrying cost. Last year 5,062 loans were made and 502,792 persons saw the films.

The film loan catalogue is available upon request.

Eighty per cent of ovarian tumors are cystic, and 20 per cent are dense and are most often malignant.

* * *

Most relatives of cancer patients, if given proper explanations and encouragement by the physician, are the patient's greatest source of comfort during the trying period of therapy. It is up to the physician to draw them into his camp.

* * *

Long exposure to the sun's rays by persons past middle life should be avoided.

* * *

Circumcision in infancy apparently prevents penile cancer.

* * *

All precancerous skin lesions should be removed.

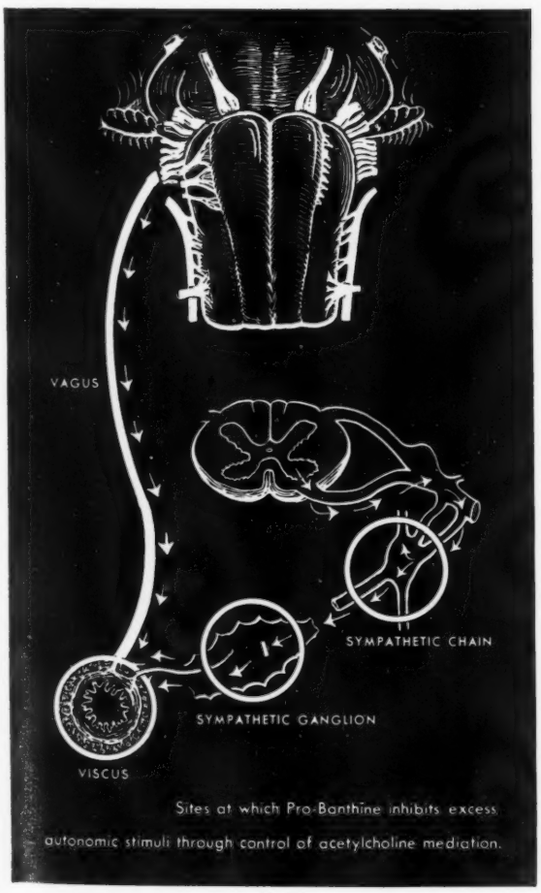
PRO-BANTHĪNE® FOR ANTICHOLINERGIC ACTION

A Combined Neuro-Effector and Ganglion Inhibitor

Pro-Banthīne consistently controls gastrointestinal hypermotility and spasm and the attendant symptoms.

Pro-Banthine is an improved anticholinergic compound. Its unique pharmacologic properties are a decided advance in the control of the most common symptoms of smooth muscle spasm in all segments of the gastrointestinal tract.

By controlling excess motility of the gastrointestinal tract, Pro-Banthine has found wide use[1] in the treatment of peptic ulcer, functional diarrheas, regional enteritis and ulcerative colitis. It is also valuable in the treatment of pylorospasm and spasm of the sphincter of Oddi.



Sites at which Pro-Banthine inhibits excess autonomic stimuli through control of acetylcholine mediation.

Roback and Beal[2] found that Pro-Banthine orally was an "inhibitor of spontaneous and histamine-stimulated gastric secretion" which "resulted in marked and prolonged inhibition of the motility of the stomach, jejunum, and colon. . . ."

Therapy with Pro-Banthine is remarkably free from reactions associated with parasympathetic inhibition. Dryness of the mouth and blurred vision are much less common with Pro-Banthine than with other potent anticholinergic agents.

In Roback and Beal's[2] series "Side effects were almost entirely absent in single doses of 30 or 40 mg. . . ."

Pro-Banthine (β-diisopropylaminoethyl xanthene-9-carboxylate methobromide, brand of propantheline bromide) is available in three dosage forms: sugar-coated tablets of 15 mg.; sugar-coated tablets of 15 mg. of Pro-Banthine with 15 mg. of phenobarbital, for use when anxiety and tension are complicating factors; ampuls of 30 mg., for more rapid effects and in instances when oral medication is impractical or impossible.

For the average patient one tablet of Pro-Banthine (15 mg.) with each meal and two tablets (30 mg.) at bedtime will be adequate. G. D. Searle & Co., Research in the Service of Medicine.

---

1. Schwartz I. R.; Lehman, E.; Ostrove, R., and Seibel, J. M.: Gastroenterology *25*:416 (Nov.) 1953.
2. Roback, R. A., and Beal, J. M.: Gastroenterology *25*:24 (Sept.) 1953.

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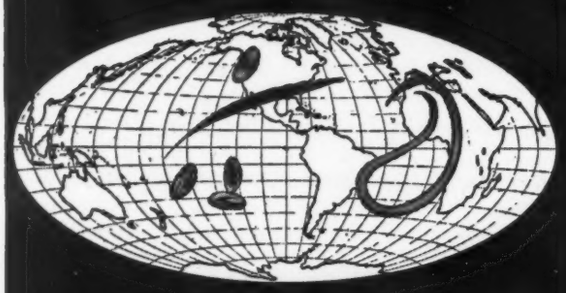

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Legal Opinions

CHIROPRACTORS "NOT QUALIFIED . . ."

Opinion of Thomas M. Kavanagh, Attorney General

CHIROPRACTORS:
SCHOOLS:

Former opinion holding that chiropractor was not qualified to give students an adequate physical examination and to certify as to their fitness to compete in interscholastic athletic contests as required by rule of Superintendent of Public Instruction, reviewed and approved.
Opinion No. 1894

January 7, 1955

Mr. Charles C. Lynch, D.C.
Secretary-Treasurer
State Board of Chiropractic Examiners
2208 West Grand Boulevard
Detroit 8, Michigan

Dear Sir:

By letter to my predecessor you refer to O.A.G. No. 842 by which it was held "that a chiropractor's certificate would not satisfy the requirements of Rule No. 3 of the Department of Public Instruction." You also cite O.A.G. No. 1247 which concluded that a lawfully licensed chiropractor is a legal practitioner of a school of medicine within the meaning of our statutes and hence entitled to the privilege of treating patients in county hospitals.

You inquire whether, in view of such latter opinion, said Rule No. 3 of the Department of Public Instruction would now be held to be satisfied by a chiropractor's certificate reciting that a student who desires to engage in interscholastic athletic activities has passed an adequate physical examination and is, in the opinion of the chiropractor, fully able to compete in athletic contests.

The rule in question reads as follows:

"No student shall be eligible to represent his high schoool for whom there is not on file with the superintendent or principal, a physician's statement for the current school year certifying that the student has passed an adequate physical examination and that, in the opinion of the examining physician, he is fully able to compete in athletic contests."

By O.A.G. No. 1247 it was concluded:

"Chiropractic is clearly a school of medicine recognized by the laws of Michigan. CL 1948, Secs. 338.151-338.159 define and regulate this school.

"A lawfully licensed chiropractor is a legal practitioner of a school of medicine recognized by the laws of Michigan within the meaning of PA 1913, No. 350, as amended, and hence is entitled to privileges in treating patients in county hospitals governed by that act equal to those accorded to the practitioners of the other schools of medicine recognized by our laws."

Such holding was in accord with the authorities [illegible] cited. However, it is likewise true as pointed out in said opinion:

Say you saw it in the Journal of the Michigan State Medical Society

"In practicing their profession in public hospitals and elsewhere chiropractors are, of course, limited to the practice of chiropractic as defined by law and may not invade medical fields reserved to the practitioners of other schools of medicine."

Such limitation upon the scope of the field of practice of a chiropractor is based upon the statute which provides:

"The license provided for in this act shall entitle the holder thereof to practice chiropractic in the state of Michigan, and for the purpose of this act chiropractic is defined as 'the locating of misaligned or displaced vertebrae of the human spine, the procedure preparatory to and the adjustment by hand of such misaligned or displaced vertebrae and surrounding bones or tissues.'" *Sec. 338.156, C.L. 1948; Sec. 14.596, M.S.A.*

As contrasted therewith, the Medical Practice Act defines the practice of medicine as:

"***In this act, unless otherwise provided, the term 'practice of medicine' shall mean the actual diagnosing, curing or relieving in any degree, or professing or attempting to diagnose, treat, cure or relieve any human disease, ailment, defect, or complaint, whether of physical or mental origin, by attendance or by advice, or by prescribing or furnishing any drug, medicine, appliance, manipulation or method, or by any therapeutic agent whatsoever." *Sec. 338.59, C.L. 1948; Sec. 14.539, M.S.A.*

The rule requires that such certificate be based upon "an adequate physical examination" of the student. Such exactment may not be fulfilled short of an examination reasonably calculated to disclose any weakness or ailment which would render the student's participation in athletic activities harmful to his health. That is equally true whether or not the diagnosis and treatment of any such ailment came within the scope of medical practice permissible to the chiropractor. The limitations upon the authority of the chiropractor to diagnose as well as treat for various ailments is apparent from the above quoted statutory provisions. The giving of an adequate examination would necessarily require the invasion of fields of medical practice not legally open to a chiropractor. For that reason the Attorney General is in accord with the conclusion reached in O.A.G. No. 842. Accordingly, your inquiry is answered in the negative.

Very truly yours,
THOMAS M. KAVANAGH
Attorney General

Fluoroscopy and radiography are the most important diagnostic procedures in gastric cancer.

* * *

Surgery is the only form of treatment—either curative or palliative—in gastric cancer.

* * *

In metastatic cancer of the liver, the alkaline phosphotase level in the blood is often disproportionately elevated.

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Bumbalo, T. S., Gustina, F. J., and Oleksiak, R. E.:
J. Pediat. 44:386, 1954.

White, R. H. R., and Standen, O. D.:
Brit. M. J. 2:755, 1953.

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"Ninety per cent of the children passed all of their ascarides . . ."

Brown, H. W.:
J. Pediat. 45:419, 1954.

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Communications

September 30, 1954

Dear Dr. Haughey:

Pursuant to our conversation of yesterday, I think it is very advisable that considerable effort be made by the Michigan State Medical Society to promote this idea of a statistical review of cases of carcinoma of the lung in all hospitals.

This procedure would prove to be very valuable, because:

1. Absolute facts would be involved, such as biopsies, autopsies, and pathological reports, et cetera.
2. Complete histories are available on the patients' charts.
3. A questionnaire would bring out all salient factors, so that a statistical survey, such as the one from Mount Carmel Mercy Hospital, would be of value when used with other information, such as known carcinogenic agents to date.

The method of obtaining this information should be under the supervision of the Chairman of the *American* Medical Association's Cancer Committee. This Committee should receive the report from all individual *State* Medical Society Cancer Committees, audit this data, and co-operate with the National cancer organization.

The Cancer Committees of the *State* Medical Societies should stimulate the Cancer Committee of each *County* Medical Society in their work in obtaining this material.

The Cancer Committee of the *County* Medical Societies should in turn stimulate each *hospital* in the county to assemble information from all records in the hospitals concerning cancer of the lung. To make these records as complete as possible, they should be supplemented with a questionnaire mailed to each individual patient, or a relative of the deceased patients.

When the hospitals have completed their survey, the information should be forwarded to the County Medical Society's Cancer Committee, in turn to the State Cancer Committees, and finally to the American Medical Association for evaluation of data from the United States and Canada.

If this idea is fostered and supported by the State Medical Society, I can see where it would be a long-range proposition, taking at least two or three years to complete. However, at the end of the rainbow will be found information, not otherwise procurable, which could be the "uranium well" for the control of malignancy of the lung.

Kindest personal regards.

Sincerely yours,
LOUIS J. GARIEPY, M.D.

Malignant melanoma and retinoblastoma are the most common malignant tumors of the eye. In both conditions, treatment should be begun in time to prevent spread of the disease. Prompt and accurate diagnosis can considerably increase the five-year survival rate.

* * *

Malignant melanoma of the eye is found most frequently in adults from 50 to 70 years of age. In most cases, the first symptom is impairment of vision.

Say you saw it in the Journal of the Michigan State Medical Society

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of menopausal distress is
prompt and the "sense of well-being"
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to the patient.

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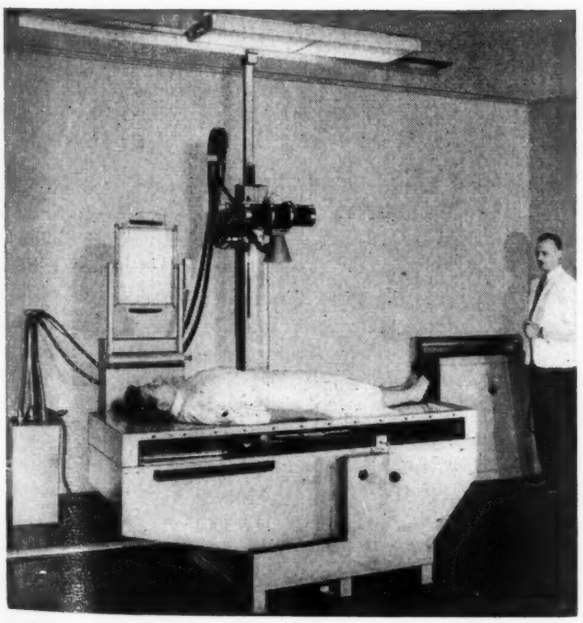

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The unit is available in either 100 or 200 milliampere rating and for single or two-tube operation. A full 100 kilovolts are available at ALL milliampere settings.

The tubestand is furnished in either of two types at the same price —mounted on floor rails or floor-to-ceiling mounted. The tube arm on both types swings laterally through 90° to clear the table for vertical positioning and for single-tube fluoroscopy in both vertical and horizontal positions. A manually operated stereoscopic shift provides a lateral shift of 6″ on both sides of center.

The table is precisely counterbalanced for finger-tip tilting. A motor drive of the quiet, but powerful, roller chain type is available. A full-size 12″ x 16″ fluoroscopic screen is mounted on the table. It can be equipped with a spot film device that functions for one central, two horizontal, two vertical, or four corner radiographs on an 8″ x 10″ film.

The control is fully automatic, with its devices aligned progressively from left to right for the setting of each exposure factor in consecutive steps.

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. . . . . NEWS MEDICAL

MICHIGAN AUTHORS

James H. Maxwell, M.D., Ann Arbor, is the author of an article entitled "The Rational Use of Antibiotics in Otolaryngology" presented at the Fifty-Ninth Annual Session of the American Academy of Ophthalmology and Otolaryngology, September, 1954, in New York, and published in the *Transactions, American Academy of Ophthalmology and Otolaryngology,* November-December, 1954.

Alexander Blain, III, M.D., and **Stuart W. Hamburger, M.D.,** Detroit, are the authors of an article entitled "Refractory Symptomatic Prolapsed Gastric Mucosa Relieved by Gastrectomy," published in *Annals of Surgery,* January, 1955.

Francis S. Gerbasi, M.D., Long Beach, California, and **Alexander Blain, III, M.D.,** Detroit, are the authors of an article entitled "Surgical Aspects of Dissecting Aortic Aneurysms," published in *Angiology,* June, 1954.

* * *

Lawrence A. Pratt, M.D., and **Kenneth A. Wood, M.D.,** Detroit, are the authors of an article entitled "Bronchial Adenoma" published in *The Grace Hospital Bulletin,* July, 1953.

Hermann Pinkus, M.D., Monroe, is the author of an article entitled "Histopathology of Allergic Dermatoses," read by invitation at the Decennial Congress of The American College of Allergists, Miami Beach, Florida, April 9, 1954, and published in *Annals of Allergy,* November-December, 1954.

Delmar F. Weaver, M.D., Detroit, is the author of an article entitled "Complications Resulting from Chronic Mastoiditis with Cholesteatoma," published in *AMA Archives of Otolaryngology,* January, 1955.

S. Albert, M.D., Ralph M. Johnson, M.D., and **Hermann Pinkus, M.D.,** Detroit, are the authors of an article entitled "The Effect of Transplanted and Spontaneous Mouse Mammary Gland Carcinomas on Lymph Nodes," published in *Cancer Research,* November, 1954.

Walter M. Whitehouse, M.D., Ann Arbor, is the author of an article entitled "Correlation of Surgical Pathology with Telepaque Cholecystography in Doses of Two Grams," published in *Surgery, Gynecology and Obstetrics,* February, 1955.

D. Emerick Szilagyi, M.D., and **Paul R. Overhulse, M.D.,** Detroit, are the authors of an article entitled "Segmental Aorta-Iliac and Femoral Arterial Occlusion," read before the Section on Surgery—General and Abdominal, at the 103rd annual meeting of the American Medical Association, San Francisco, June 25, 1954, and published in *The Journal of the American Medical Association,* January 29, 1955.

Ralph M. Johnson, M.D., S. Albert, M.D., and **Hermann Pinkus, M.D.,** Detroit, are the authors of an article entitled "Serum Proteins in Mice Bearing Induced and Spontaneous Mammary Gland Carcinomas," published in *Cancer Research,* December, 1954.

Hermann Pinkus, M.D., S. Albert, M.D., and **Ralph M. Johnson, M.D.,** Detroit, are the authors of an article entitled "The Uptake of Radioactive Phosphorus by Mouse Lymph Nodes during Sensitization to a Foreign Protein," published in the *Journal of Immunology,* November, 1954.

* * *

James E. Mahan, M.D., of Allegan was honored on February 21, in connection with the celebration of the golden anniversary of the founding of Rotary International, when he was granted the Red Rose of Rotary award. Only three of these awards have been given since the founding of the Allegan Rotary Club in 1924. Dr. Mahan was "singled out for his benevolence and sympathetic regard for his fellow man; giving of his energy regardless of time or circumstances." Dr. Mahan has served as secretary of the Allegan County Medical Society for many years.

* * *

The 1955 Industrial Health Conference will be held in Buffalo, New York, April 23-29. Michigan men taking part in the program are: Ralph G. Smith, Bureau of Industrial Hygiene, Detroit Department of Health; D. E. Van Farowe, Michigan Department of Health; Warren A. Cook, University of Michigan Institute of Industrial Health, Ann Arbor; Miss Helen DeCoursey, R.N., Kelsey-Hayes Wheel Company, Detroit; Frank A. Patty and Mrs. Kathleen Kumler, General Motors Research Laboratories, Detroit; Grant U. MacKenzie, D.D.S., Ford Motor Company, Dearborn; T. P. Schreiber and R. C. Frank, General Motors Research Laboratories, Detroit.

* * *

The March, 1955 number of the *Journal of Chronic Diseases,* the third number issued recently received is deserving of special comment. The editors are Joseph Earl Moore, M.D., of Baltimore and David Segal, M.D., of New York. The editorial board of twenty well-known

(Continued on Page 496)

A Summary of Recent Research*

Wine in Modern Medical Practice

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a series of independently conducted research programs has been in progress for many years under the sponsorship of the Wine Advisory Board of California.

Some of the most important new research findings have been incorporated in a small brochure* specifically written for the medical profession. The booklet considers the role of wine in the treatment of the convalescent and the geriatric patient, as well as its use in the specialized fields of gastroenterology, cardiology, urology, etc. There is mention, too, of the psychobiologic effects of wine, such as its capacity to add a touch of interest and "elegance" to restricted or special dietaries.

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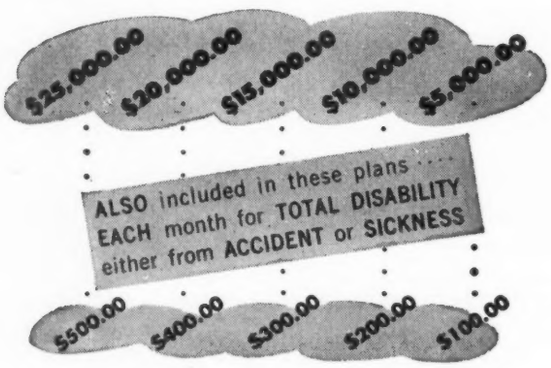

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Omaha 2, Nebraska

(Continued from Page 494)

men is headed by Carl E. Badgley, M.D., of Ann Arbor. The papers are wonderfully well selected, including Studies of Chronic Diseases in Industry, Management of Arthritis, Cirrhosis of the Liver, Idiopathic Cardiomegaly and Systematic Lupus Erythematosis with a review of 126 cases. There are three very good scientific editorials dealing with cirrhosis, gout and home care of chronic illness. The pages are 7"x10", side stitched. The journal is published by the C. V. Mosby Company.

* * *

Surgery Where It Hurts.—The cancer-cigaret issue has hit Michigan in its most tender spot—the budget. In the past six months, receipts from the state three-cent cigaret tax have fallen off more than $600,000, which is no amount to be sneezed at.—*Inside Michigan*, March, 1955.

* * *

Inside Michigan, in its March, 1955, cover has a large picture showing a row of spectators looking at a television screen illustrating an operating room procedure—probably taken at last year's MCI session and previewing the program this year. The caption is "What's New, Doctor?" That is also the title of the first article, with a picture of Doctor McCo'l, and a scene in the exhibit room.

* * *

An international symposium on cardiovascular surgery was held March 17, 18, 19, 1955 under the auspices of the Henry Ford Hospital in Detroit. Among the sixty participants were leaders from all over the world, with registrations from Australia, Italy, France, South America, Mexico, Canada, England, Sweden, New Zealand. Michigan participants were: Conrad R. Lam, M.D., Robert F. Ziegler, M.D., Harper K. Hellems, M.D., John W. Keyes, M.D., all of Detroit, and Herbert Sloan, M.D., Ann Arbor. On account of the great demand for seats, no publicity was given locally, the complete attendance list of 450, filling the Clinic Building Auditorium, was by invitation. A book of the proceedings will be published.

* * *

The Federal Government employs about 10 per cent of the active physicians, 9 per cent of the active dentists, and 6 per cent of the active graduate nurses. Thirteen per cent of all hospital beds are in federal hospitals, and about 7 per cent of the total number of patients admitted to hospitals each year are admitted to federal hospitals.—Hoover Commission report, 1955.

* * *

A summer camp for diabetic children will be opened for the seventh season under the auspices of the Chicago Diabetes Association, Inc., from July 17 to August 7, 1955 at Holiday Home, Lake Geneva, Wisconsin. Boys and girls, ages eight through fourteen years, are eligible. For further information, write the Chicago Diabetes Association, 5 South Wabash Avenue, Chicago 3, Illinois.

(Continued on Page 498)

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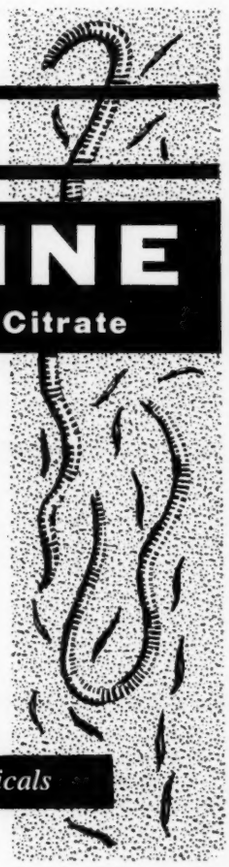

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1. Pollock, B. E., and Pruitt, F. W.: Am. J. M. Sc., 226:172, 1953.

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(Continued from Page 496)

Research grants have recently been made by Eli Lilly and Company to twelve institutions, including eight universities, one of which is the University of Michigan. The grant for the University is to provide a fellowship in the department of chemistry under the direction of R. C. Elderfield, M.D.

* * *

Homer Howes, M.D., of Detroit, was elected historian at the annual business meeting of the American Academy of Allergy, held at the Statler Hotel, New York, February 8, 1955.

* * *

The twenty-eighth annual Spring Congress in Ophthalmology and Otolaryngology of the Gill Memorial Eye, Ear and Throat Hospital was held in Roanoke, Virginia, April 4 to 9, 1955. Among the guest speakers were Albert D. Ruedeman, M.D., Detroit, Richard Schneider, M.D., Ann Arbor, and John Sheldon, M.D., Ann Arbor.

* * *

The fourth annual Symposium for General Practitioners on Tuberculosis and other Chronic Pulmonary Disease will be held in Saranac Lake, New York, July 11 to 15, 1955. It is approved for twenty-six hours of formal credit for members of the American Academy of General Practice.

This five-day course is designed particularly for general practitioners and presented over a period short enough so that they may readily attend. Many of the sessions are informal panel discussions with ample opportunity for questions from the audience.

Sessions will be held in the various sanatoria, hospitals and laboratories in the Saranac Lake area. The faculty will consist of physicians, surgeons and scientists from Saranac Lake as well as guest lecturers.

Information and copies of the program can be obtained by writing Dr. Richard P. Bellaire, General Chairman, Symposium for General Practitioners, P.O. Box 2, Saranac Lake, N. Y.

* * *

The 54th annual meeting of the American Proctologic Society will be held at the Hotel Statler, New York, June 1-4, 1955. Presiding will be A. W. Martin Marino, M.D., of Brooklyn, N. Y., president. All meetings are open to the medical profession.

At the sessions on Wednesday, June 1, lectures on basic sciences will be given by the following distinguished authorities: Henry T. Randall, M.D., Clinical Director of the Memorial Hospital-Sloan Kettering Division of Cornell University Medical School—"General Principles of Water and Electrolyte Balance in Gastro-Intestinal Tract Surgery;" Benjamin G. Shafiroff, M.D., Associate Professor of Clinical Surgery, N. Y. U. Medical School—"Autonomic Nervous System of Colon and Rectum;" E. A. Rovenstein, M.D., Professor of Anesthesia, N. Y. U. Medical School—"The Pharmacology of Local Anesthetic Agents;" Frank L. Meleny, M.D., Professor of Clinical Surgery, College of Physicians and Surgeons,

(Continued on Page 500)

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The Michigan Alcoholic Rehabilitation Foundation is a non-profit organization devoted to the proper hospitalization of alcoholics seeking to stop drinking.

Contributions to the Foundation are deductible and should be sent to 2379 National Bank Bldg., Detroit 26, Michigan.

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(Continued from Page 498)

Columbia University—"The Rationale for the Prophylactic and Therapeutic Employment of Antibiotics as an Adjunct to Surgery of the Alimentary Tract."

Other featured speakers include Herman Steinberg, M.D.; Parker Vanamee, M.D.; Herbert S. Kupperman, M.D.; Arthur Purdy Stout, M.D.; Maurice M. Richter, M.D., and Ernest W. Lampe, M.D.

From Thursday, June 2, to Saturday, June 4, technical papers by members and guest speakers will be presented. These reports have been selectd by the Program Committee, whose chairman is Dr. Norman D. Nigro of Detroit.

The American Proctologic Society was founded in 1899 and now has more than 550 members, the largest organization in its specialty field in the world. Outstanding and recognized ability, knowledge and competence are the criteria for membership.

* * *

Representatives from two medical schools in Michigan will attend the fifth annual convention of the Student American Medical Association at the Sherman Hotel, Chicago, Illinois, May 6, 7, and 8.

A highlight of the three-day meeting, which includes the official deliberations of the sixty-seven-member House of Delegates, will be the first annual banquet, held May 7. Dr. You Chan Yang, Korean ambassador to the U. S., will speak on "Medicine and Diplomacy." The three national winners of the SAMA-Blue Shield essay contest will be announced at this dinner.

John A. Oates, Jr., of Bowman Gray School of Medicine and President of SAMA, invites all members of the medical profession who are in the Chicago vicinity during the convention to attend the meeting.

Louis J. Regan, M.D., a prominent physician-lawyer and one of the nation's foremost experts on malpractice, will headline a panel on forensic medicine Saturday afternoon, along with Irving Goldstein, Chicago attorney and leading authority on trial technique. Mr. Goldstein will also preside as judge at the moot court featuring SAMA members and representatives of the American Law Student Association.

Forty technical exhibitors, representing the drug and equipment industry, will display their products at the convention. Some lucky medical student will win a seven-day all expense paid "Millionaire's Dream Vacation" to Miami Beach, Florida. In addition, several other awards will be made to members who register at the booths in the technical exhibit area.

Sunday's program highlights the appearance of Nicholas Dallis, M.D., creator of "Rex Morgan, M.D.," the popular newspaper feature. Dr. Dallis will present the story of his cartoon strip and introduce the artist team who draws it.

With an expected registration of over 1,000 medical students and interns, the convention promises to be the largest gathering in the short, but successful, history of SAMA.

Say you saw it in the Journal of the Michigan State Medical Society

INGHAM COUNTY MAY CLINIC

The twenty-seventh May Clinic of the Ingham County Medical Society will be held Thursday, May 5, 1955, at Hotel Olds, Lansing, Michigan.

Afternoon Session—1:30 P.M.

Registration.

"Anesthetic Management in Acute Emergency Situations"—F. H. Van Bergen, M.D., Director of Anesthesiology, University of Minnesota Medical School, Minneapolis, Minnesota.

"Combined Chemotherapy in Infectious Diseases"—Wesley W. Spink, M.D., Professor of Medicine, University of Minnesota, Medical School, Minneapolis, Minn.

"Surgical Management of Cancer"—Owen H. Wangensteen, M.D., Professor of Surgery, University of Minnesota Medical School, Minneapolis, Minn.

"The Complete Investigation of the Suspected Cervix"—Allan C. Barnes, M.D., Professor of Obstetrics and Gynecology, Western Reserve University, Cleveland, Ohio.

Social Hour—5:15 P.M.

Subscription Dinner—6:30 P.M.

Speaker—Leo G. Rigler, M.D., Professor of Radiology, University of Minnesota Medical School, Minneapolis, Minn.

A. C. Furstenberg, M.D., of Ann Arbor, recently was honored upon completion of twenty years as Dean of the University of Michigan Medical School. Dr. Furstenberg was presented with the Bene Merenti Medal from Pope Pius XII. The presentation was made by Rev. Frank J. McPhillips of the Student Chapel of the University of Michigan. Postmaster General Arthur E. Summerfield read a congratulatory message from President Eisenhower. Many medical and lay leaders spoke at the presentation or sent greetings.

Congratulations, Dean Furstenberg!

* * *

Coals to Newcastle

By virtue of their offices, the president and president-elect of the American Medical Association are deluged with fan mail. Every time one or the other makes a speech and newspapers publicize it, the mail pours in. Here is a letter, a gem, which President-Elect Elmer Hess received from a lady in Texas:

"I noticed in the paper where you are ailing with a cough. Please try this, as I have seen TB patients cured from trying it. Get yourself a small bottle about three inches tall. Put one-third of salt (table salt) and two-thirds of whisky in the bottle. Shake well. Take a swallow several times a day."

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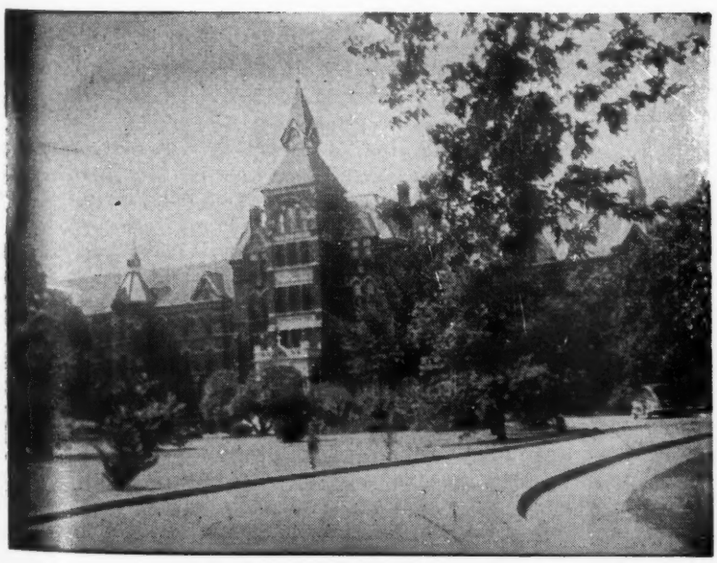

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"What's New, Doctor?" is the title of the lead article featured in *Inside Michigan*, the magazine which has the slogan "Providing enlightenment on public affairs."

The cover of the March *Inside Michigan* also featured the activities of doctors of medicine, specifically the Michigan Clinical Institute of 1955. The cover was a photograph reproduction of colored television, via closed circuit, sponsored during Michigan Clinical Institutes through the co-operation of Smith, Kline & French Laboratories of Philadelphia.

"The entire MCI program is designed to bring Michigan doctors of medicine definite information useful in their daily practice," stated *Inside Michigan*, "not just what is going on in the experimental laboratories. MCI stresses the 365 days of rapid medical progress."

Thanks, *Inside Michigan*.

* * *

George J. Curry, M.D., Flint, has been appointed Chairman of all State Regional Committees on Trauma, American College of Surgeons, in the United States and Canada.

Duncan Cameron, M.D., of Lincoln Park, has been made Chairman of Section 5 of the State Regional Committee on Trauma, ACS, the position occupied for a number of years by Dr. Curry.

Congratulations, Doctors Curry and Cameron.

* * *

Joseph P. Hoet, M.D., Professor of Internal Medicine at the University of Louvain, Belgium, was special guest speaker at a luncheon meeting arranged March 11 in the Sheraton-Cadillac Hotel, Detroit, during the Michigan Clinical Institute.

Dr. Hoet reported on his studies on the relation of pregnancy and diabetes to members of the Michigan Diabetes Association, Michigan Society of Obstetricians and Gynecologists, and the Detroit Pediatric Society. The luncheon was arranged by a committee composed of Richard M. McKean, M.D., Chairman; Lawrence F. Segar, M.D.; Harold A. Ott, M.D., and Manes S. Hecht, M.D., all of Detroit.

Dr. Hoet flew from Louvain to Detroit; following his Michigan appearance, he went by airplane to New York to conduct a two-week postgraduate course at the New York Academy of Medicine.

* * *

Michigan had a total of 4,565 acceptable beds available for the care of tuberculosis patients (on December 31, 1954), with a patient census of 4,331 on that date, according to reports of the Michigan Department of Health.

* * *

The American Association of the History of Medicine will hold its annual meeting in Detroit on May 12-13-14, 1955, at the Park Shelton Hotel. Alfred H. Whittaker, M.D., Detroit, is Chairman of the Committee on Arrangements. F. A. Coller, M.D., Ann Arbor, is guest speaker at the annual banquet; he will speak on "The Relation of Surgery to Science." For information and program, write Dr. A. H. Whittaker, 1427 E. Jefferson Avenue, Detroit, or Samuel X. Radbill, 7043 Elmwood Avenue, Philadelphia 42.

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George J. Curry, M.D., Flint, was given a signal honor during the recent Michigan Clinical Institute in Detroit. Recognizing the postgraduate medical training of residents and interns, especially in the field of trauma and orthopedics, which has been the altruistic avocation of Dr. Curry for many years, the Michigan State Medical Society, the Michigan Regional Committee on Trauma of the American College of Surgeons, and the Michigan Industrial Medical Association joined hands in presenting a scroll to Dr. Curry at the conclusion of the Second Assembly (trauma program) of the Institute. The award, presented jointly by Robert H. Baker, M.D., Pontiac, President of the Michigan State Medical Society, Vernon C. Abbott, M.D., Pontiac, Chairman of the Trauma Committee, and Lyndle R. Martin, M.D., President of the Michigan Industrial Medical Association, was a highly illuminated and embossed scroll. The phraseology of the scroll, received as a surprise by Dr. Curry, read as follows:

"This token is presented to George J. Curry, M.D., of Flint, in deep appreciation and grateful recognition of distinguished service rendered by him to medical education; as a great stimulus to resident training and in the study and management of problems relating to surgery of trauma."

The University of Michigan Eighth Annual Conference on Aging will be held in Ann Arbor, Michigan, June 27-30, 1955.

Topic of the conference is "Aging—Applying Today's Knowledge, Today." The program will be focused on gaining greater skill in the use of principles, practices, methods and techniques needed for more effective service to older people.

A series of Workshops will offer advanced leaders, experienced workers, and newcomers to the field an opportunity to study the application of present-day knowledge to the solution of problems of older people in the fields of employment, housing, community organization, health, religion, education, use of leisure time, legislative action and advanced planning.

For information, write Wilma Donahue, Division of Gerontology, 1510 Rackham Building, Ann Arbor.

* * *

A course in neuromuscular diseases of children with special emphasis on cerebral palsy will be offered by M. A. Pearlstein, M.D., Chicago, at the Cook County Graduate School of Medicine, beginning June 20. Tuition for this intensive two-week didactic and clinical course in the diagnosis and management of the neuromuscular diseases of children, including field trips to itinerant clinics, is $225.00 (including costs of luncheons during the course and cost of transportation and hotels during the itinerant clinics). Registration is limited. Write Cook County Graduate School of Medicine, 707 South Wood Street, Chicago.

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The annual Symposium on Trauma and Nutrition, sponsored by the Michigan Regional Committee on Trauma, American College of Surgeons, will be held May 19 at the Rackham School of Postgraduate Studies, Ann Arbor. The program feature is that every speaker is a house officer from a hospital in Michigan, Windsor (Ontario) and Toledo (Ohio) having approved residencies or internships. The papers are judged, with the winner being presented with the "Frederick A. Coller Award." The best paper is based on originality and importance of the work, as well as completeness and excellence of presentation.

* * *

Conference on Anesthesiology.—Wayne University College of Medicine offers a comprehensive unit course in anesthesiology, April 21-23, 1955. The course, a series of didactic preparations and panel discussions and related subjects, is intended primarily for the part-time anesthetist or general practitioner seeking anesthesia. Experts in the field of anesthesiology will present the lectures; adequate time will be allowed for discussion. The last day of the session will be devoted to a round table dealing with particular problems in anesthesiology presented by the registrants. Fee $40. For complete program and further information, write F. E. Greifenstein, M.D., Professor of Anesthesiology, Wayne University College of Medicine, 1401 Rivard, Detroit.

* * *

Postgraduate medical education in the United States.—The two and one half year survey made by the AMA's Council on Medical Education in Hospitals is being reported, currently, in *The Journal of the American Medical Association* (issues from February 26 through June 4). Following the publication of all articles, the entire series will be reprinted in monograph form, to which will be added a section on the "History of Postgraduate Medical Education." For copies of the reprint, write Edward L. Turner, M.D., Secretary of the Council, 535 N. Dearborn St., Chicago 10, Illinois.

* * *

Retired Vice Admiral Ross T. McIntyre, M.D., who was wartime Surgeon General of the Navy, has been appointed Executive Director of the International College of Surgeons with headquarters in Chicago. Dr. McIntyre has served in many responsible positions such as Chairman of the President's Committee on National Employ the Physically Handicapped Week, Director of the American Red Cross National Blood Program, and as personal physician to the late President Roosevelt.

Commenting on this appointment, AMA Secretary George F. Lull states: "Admiral McIntyre has had a wide and varied experience in matters of medicine and health and Dr. Max Thorek and his Executive Board (International College of Surgeons) are to be commended for their selection of a man of Admiral McIntyre's caliber."

* * *

At the 1954 AMA Clinical Session in Miami, J. S. DeTar, M.D., of Milan, was a member on the Reference Committee on Reports of Board of Trustees and Secretary, and Ralph A. Johnson, M.D., Detroit, was on the Reference Committee on Hygiene Public Health and Industrial Health.

Cook County Graduate School of Medicine

INTENSIVE POSTGRADUATE COURSES
STARTING DATES, SPRING 1955

SURGERY—Surgical Technic, two weeks, April 18, May 2
Surgical Technic, Surgical Anatomy and Clinical Surgery, four weeks, June 6
Surgical Anatomy and Clinical Surgery, two weeks, June 20
Surgery of Colon and Rectum, one week, May 9
General Surgery, two weeks, April 25; One week, May 23
Gallbladder Surgery, ten hours, June 27
Thoracic Surgery, one week, June 6
Esophageal Surgery, one week, June 13
Fractures and Traumatic Surgery, two weeks, June 13

GYNECOLOGY—Office and Operative Gynecology, two weeks, April 18, June 13
Vaginal Approach to Pelvic Surgery, one week, May 2

MEDICINE—Two-week Course May 2
Electrocardiography and Heart Disease, two weeks, July 11
Gastroenterology, two weeks, May 16
Dermatology, two weeks, May 9
Hematology, one week, June 13

RADIOLOGY—Diagnostic Course, two weeks, May 2
Clinical Uses of Radio Isotopes, two weeks, May 2
Radium Therapy, one week, May 23

PEDIATRICS—Intensive Course, two weeks, April 11
Clinical Course, two weeks, by appointment
Neuromuscular Diseases, two weeks, June 20

UROLOGY—Two-week Urology Course, April 18
Ten-day Practical Course in Cystoscopy every two weeks

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Bermuda-Nassau Cruise.—An attractive brochure, describing in detail a Bermuda-Nassau eight-day cruise which will follow the American Medical Association's convention in Atlantic City, June 6-10, is available by writing the International Travel Bureau, Palmer House, Chicago 3, Illinois.

* * *

Frank E. Smith, M.D., Executive Director of Blue Shield Commission of America for eight years, has become associated with the International Travel Service, Inc., Palmer House, Chicago 3, Illinois.

* * *

"What it Costs People to be Sick" was the title of an interesting article published in the December 24 issue of *U. S. News and World Report.* Quoting figures "based on the latest study of the Social Security Administration brought currently through estimates by the Economic Unit of *U. S. News and World Report,*" this special article points out some favorable information on doctors' fees. The story said:

"Government experts attribute most of the rise in hospital expense to higher charges resulting from better pay scales for hospital workers and the higher cost of food.

"Dentists and physicians, on the other hand, are getting a somewhat smaller share of the nation's private medical outlays. This finding runs counter to criticism of physicians' fees.

"Physicians' fees used to account for 30 per cent of the out-of-pocket cost; now they are 29 per cent. Dental bills are less than 10 per cent today, compared with more than 12 per cent in 1948.

"These fees tend to stay fairly constant for periods of years. The last big jump came during World War II. Today many physicians are charging the same for office calls and sickroom visits as they did shortly after the war."

The report said that medical care is costing people a total of 12.4 billion dollars a year, of which 2.1 billion is met through health insurance.—From *AMA Secretary's News Letter,* January 7, 1955.

* * *

"According to the Record" is the name of a new highway safety motion picture which is being enthusiastically received in all parts of Michigan. It is a color sound motion picture, 28 minutes, available through State Police Posts to adult and 'teen age audiences. The MSMS Committee on Study of Prevention of Highway Accidents, of which John R. Rodger, M.D., Bellaire, is Chairman, highly recommends to medical groups the use of this movie.

* * *

Let Government Make All Autos! Someone mailed Dr. F. J. L. Blasingame, AMA Trustee from Texas, the following clipping, entitled "Private Security," from the *Dallas Morning News:*

"Ninety-five of every 100 workers are now covered by some kind of private—not government—benefit program. This is not the brag of private business. It is a government figure.

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hospital insurance, and more than half of those have surgical policies. Six of ten are covered for sickness and accident. Five of ten have medical care. Six of ten have their own company pension coverage.

"Yet, there is growing pressure in Washington for the Federal Government to get into the medical business. It makes just as much sense as the government going into the automobile business so that those who don't have a car can have one—at taxpayers' expense. That pressure is for political 'care,' not medical care."

* * *

"CA" subscriptions outstate are up 1000 since September, thanks to the Michigan Division of the American Cancer Society with headquarters in Grand Rapids. This excellent publication in the cancer control field now reaches 1662 doctors of medicine on a complimentary basis, upon request, through the sponsorship of the Michigan Division, ACS.

In addition, the Southeastern Michigan Division (Detroit) mails copies of "CA" gratis to all physicians in its area (Wayne, Oakland, and Macomb counties).

* * *

A $100,000 gift from the California Medical Association has been received by the American Medical Education Foundation. The donation represents a treasury grant of the CMA and brings California's total contribution for 1954 to $117,230, including contributions to AMEF from 255 individual California physicians.

Another outstanding contribution recently received by the Foundation was a check in the amount of $7,230 from the Arizona Medical Association, representing a $10 per member dues increase voted for AMEF by the association. Arizona and Utah have accepted the Illinois Plan as a method of collecting contributions from their state medical society memberships. Using the plan for the second year, Illinois still leads the nation in total contribution of $163,120.

* * *

The Michigan Chapter of the American College of Chest Physicians will hold a special meeting Friday, May 13, 1955, at 8:30 P.M. in the Auditorium of the Henry Ford Hospital, Detroit.

The speaker will be Dr. Richard R. Trail, Medical Director Papworth Village Settlement, London, England. His topic will be: "Modern Therapy and Rehabilitation in Tuberculosis." This meeting is open to all members and others interested in medical rehabilitation of tuberculosis.

Prior to the meeting there will be a subscription dinner at 6:30 P.M. at the Wayne County Medical Society, 4421 Woodward Avenue, Detroit (TEmple 1-6400).

* * *

The American Board of Obstetrics and Gynecology will conduct the next scheduled examinations (Part II) oral and clinical for all candidates at the Edgewater Beach Hotel, Chicago, Illinois, from May 11 through May 20, 1955. Formal notice of the exact time of each candidate's examination will be sent him in advance of the examination dates.

Candidates who participated in the Part I examinations will be notified of their eligibility for the Part II examinations as soon as possible.

Office of the Secretary: Robert L. Faulkner, M.D., 2105 Adelbert Road, Cleveland 6, Ohio.

The United States Public Health Service has recently made the following preliminary observations based on a study still in progress.

Approximately half of the known active tuberculosis cases are hospitalized, and one-half are at home. Of the latter group, two out of five have drug therapy recommended. The rest are at home with no recommendations known to health departments for drug therapy.

It is difficult to determine which of the unhospitalized cases are active. Preliminary tabulations show that on the average 20 to 35 per cent of the known active cases at home have not had a clinical examination or x-ray within the preceding twelve months. A similar proportion have not had a determination of their bacteriological status. Even though rest and restriction of activity is still considered an essential part of the treatment for tuberculosis, approximately half of the cases at home were not given any specific recommendations in this regard.

These preliminary observations indicate that there are marked variations in the adequacy of care that patients are receiving at home, and that many of them are getting no more home care than in the pre-drug era. Yet many of these cases need a combination of hospitalization, surgery, and laboratory control. The drugs should not make us less active in finding cases, keeping patients and their contacts under public health supervision, and educating the public about tuberculosis.

Michigan Week will be celebrated May 15 to 21, throughout this state. Dr. Grover Dillman, President of Michigan Tech at Houghton, is the 1955 Chairman.

The active co-operation of all Michigan's doctors of medicine is one of the important items Michigan Week needs most. Members of the medical profession are invited to watch daily newspapers to learn how best they can co-operate in making successful "Michigan Week" to attract others to come to Michigan either for a temporary holiday or for permanent residence.

ACUTE YELLOW ATROPHY OF THE LIVER

(Continued from Page 476)

7. Rich, M. L.; Ritterhoff, R. J., and Hoffman, R. J.: A fatal case of aplastic anemia following chloromycetin therapy. Ann. Int. Med., 33:1459-1467 (Dec.) 1950.
8. Salm, R.: Acute necrosis of the liver following chloramphenicol therapy. Edinburgh M. J., 60: 334-336 (July) 1953.
9. Smadel, J. E.: Chloramphenicol (chloromycetin) in the treatment of infectious diseases. Am. J. Med., 7:671-685 (Nov.) 1949.
10. Smith, R. M., et al: Chloromycetin: biological studies. J. Bact., 55:425-448 (March) 1948.
11. Volini, I. F.: Hemopoietic changes during administration of chloromycetin. J.A.M.A., 142:1333 (April) 1950.
12. Wolman, B.: Fatal aplastic anemia after chloramphenicol. Brit. M. J., 2:426 (Aug.) 1952.

THE DOCTOR'S LIBRARY

Acknowledgment of all books received will be made in this column, and this will be deemed by us as full compensation to those sending them. A selection will be made for review, as expedient.

DRUGS IN CURRENT USE, 1955. Edited by Walter Modell, M.D., F.A.C.P., Associate Professor, Clinical Pharmacology, Cornell University Medical College. New York: Springer Publishing Company, Inc., 1955. Price $2.00.

SPORTS INJURIES. Prevention and Active Treatment. By Christopher Woodard, Honorary Consultant to British Olympic Teams, 1948 and 1952. London: Max Parrish, 1954. Price $3.00.

THE ROLE OF THE PITUITARY IN CANCER. The Clinical Value of Pituitary Lipid Treatment. By Henry K. Wachtel, M.D. New York: The William-Frederick Press, 1954. Price $2.00.

REPORT FOR 1953-1954. W. K. Kellogg Foundation, Battle Creek, Michigan.

VIRAL AND RICKETTSIAL DISEASES OF THE SKIN, EYE AND MUCOUS MEMBRANES OF MAN. By Harvey Blank, M.D., Squibb Institute for Medical Research, Columbia University, University of Pennsylvania, and Geoffrey Rake, M.B., B.S., University of Pennsylvania, Wistar Institute of Anatomy and Biology, Squibb Institute for Medical Research. With a foreword by Donald M. Pillsbury, M.D., University of Pennsylvania. 36 full color illustrations, 6 plates, 63 black and white illustrations. Full color insert, "Reactions to Smallpox Vaccination." Boston and Toronto: Little, Brown and Company, 1954. Price $8.50.

While this monograph covers a subject which is somewhat limited in scope, it should be received with appreciation because there has been no previous book or summary of the subject. The book covers a field in which research is progressing rapidly and the literature is extensive but scattered and usually dismissed with little attention. It includes items which are still not understood.

Basic information on each disease is included, as well as detailed discussions of the clinical and therapeutic side. The combination of clinical and scientific information makes this book a great help to both the clinician and the laboratory investigator.

The authors should be commended for the illustrations which are numerous and excellent. The references are good and a bit of humor is injected by pointing out some of the old folklore on the subject. The details regarding diagnostic methods in viral and rickettsial diseases are well presented, a subject with which the average physician is not well acquainted. Recently recognized diseases, such as herpangina and cat scratch disease, are included.

This book is of particular interest to the dermatologist and ophthalmologist, and includes items of interest to dentists, pediatricians and public health workers as well. In summary, it is an outstanding book for the subject covered.

H.E.A.

LEG ULCERS. Their Causes and Cures. By S. T. Anning, T.D., M.A., M.D. (Contab.), M.R.C.P. Assistant Physician, Dermatological Department, The General Infirmary at Leeds; Consultant Dermatologist, St. James's Hospital, Leeds; Clinical Lecturer in Dermatology in the University of Leeds. With 42 illustrations. Boston: Little, Brown and Company, 1954. Price $4.00.

This monograph of 178 pages is the author's personal experience in a leg ulcer clinic held weekly over a period of eight years. He has summarized the extensive literature on the subject, which is well done considering the bewildering volume and variety of the knowledge.

The book is concerned mainly with the etiology and treatment of the common leg ulcers associated with defective venous return of blood from the lower limb, and with ulcers resulting from arterial disease. Other types of ulcers, such as those due to perniosis, blood diseases, erythema induratum, syphilitic gummatous ulcers, ulcerative colitis and other rare causes, are only mentioned.

There is a short chapter reviewing the normal circulation of the lower leg. The discussion of the surgical aspect of leg ulcers is very brief. From this viewpoint, the book would be more useful to the dermatologist and general practitioner than the surgeon. There are no new methods of treatment presented, but in reviewing the literature and integrating it into one handy book, the author has done a good job.

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MEDICAL PRACTICE LAWS

(Continued from Page 483)

injured his practice and good standing to the extent of $250,000.

He demands redress and an injunction allowing him to practice in the hospital. We are concerned about this suit. It is a direct sequence of the decision of the Supreme Court in the case of Albert vs. Grand View Hospital et al, which was reported in our editorials in the March number of THE JOURNAL. If this suit should prevail, all the voluntary and medically established supervision of practice in our hospitals for the past half century would be voided; hospital recognition finished. Any person who has a certificate from the Michigan State Board of Registration in Medicine could demand entrance into any hospital and carry out any examinations, treatment, or surgery.

To continue the free and private practice of medicine, with guarantees of good service to our patients, it may be necessary to amend some of our laws. The Michigan State Board of Registration in Medicine does not have the regulatory power which we have voluntarily imposed upon ourselves. The Board under its powers *may* suspend the registration of a person convicted of a felony, but we hope no government agency is ever granted the regulatory powers assumed by our medical societies to provide well-trained and competent practitioners of medicine and surgery in our hospitals. If government bureaucracies assumed such power, the practice of medicine would be immediately and wholly socialized. That we cannot accept. Some other method must be found, and it is pointed up by a recent action of the Federal Government:

The Federal Register for January 13, 1955, published an amendment to Title 5, Chapter 1, Part 24 of the Code of Federal Regulations relating to requirements for appointment to positions as an "Occupational Therapist." Now Section 24 provides that applicants for these positions must be graduates of a school of occupational therapy approved at the time of graduation by "The Council on Medical Education and Hospitals of the AMA," or if graduation was prior to 1938, approved by the American Occupational Therapy Association.

Duties and knowledge and training requirements are spelled out, followed by the statement that "the necessary knowledge and training can only be acquired through a directed course of study in an approved occupational therapy school." The United States Civil Service Commission has recognized this AMA Council as an approved determining body for certifying those schools.

It would seem embarrassing for our state courts to forbid the very procedures sanctioned by the Federal Government. Perhaps arrangements may be made to constitute the AMA Councils as appropriate boards to review matters of competency of doctors of medicine to practice in their chosen fields. This procedure could be extended to and adopted by the individual states where the police powers lie.

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